

- X. *A Catalogue of the Lepidoptera Rhopalocera of Trinidad.*  
By WILLIAM JAMES KAYE, F.E.S. *With an Appendix*  
by J. GUPPY.

[Read November 4th, 1903.]

PLATES XVII AND XVIII.

THE Catalogue now submitted is intended as a companion to the Preliminary Catalogue of the Lepidoptera Heterocera published in the Transactions for 1901. There is a considerable difference between the two, as the one now offered is much more nearly a complete list. In it, as many as 289 species are enumerated, which for an island 60 miles by 40 is probably unequalled. A few of the number will doubtless have to be expunged, as errors of determination in the first instance, but their places will probably be more than filled when the last word has been said as to what does really occur. The only thing of any sort that has been published relative to the Butterflies of Trinidad is the bare list of names by W. M. Crowfoot in "The Trinidad Field Naturalists' Club" for April 1893. In that list are 199 names, several of which appear to be errors of determination, but in nearly every case I have weighed the merits of each record, before inserting it in the present Catalogue, and have indicated the probable errors. The basis of the New List is my own Collection, the majority of the specimens in which were personally obtained in May—June 1898, and again in June—July 1901. Other records are by Messrs. F. W. Urich, W. E. Broadway, H. Caracciolo, J. Guppy, and several others. All the Trinidad records at the Natural History Museum, besides those in the Hope Museum at Oxford and those in the Godman and Salvin collection have been laid under contribution, the last generally from the "Biologia Centrali Americana," and not from the actual specimens themselves. There are few new species, which is not surprising seeing that the fauna is essentially Venezuelan and Brazilian, which regions have been so well worked in the last twenty years.

The special insular characteristic is however sufficiently well marked in certain insects to call for notice. *Tithorea megara* (= *T. flavescens*), *Heliconius ethilla* and *Protogonius ochraceus* all exhibit a remarkable pale straw colour of such similarity as to at once suggest a common stress. *Dismorphia broomeæ* joins in, in only a slightly diminished degree, *Mechanitis veritabilis* shows signs of assuming this colouring by the frequent appearance of a yellow streak in the cell of the hind-wing, but the *Ceratinia*, viz. *euclea*, does not show any sign at present of conforming to this colouring. The *Tithorea* in the above trio is by far the most abundant, and is obtainable in the perfect state almost the whole year round. How far this true *T. megara* occurs elsewhere it is impossible to say owing to the confusion in the nomenclature, but *Heliconius ethilla* is almost if not quite confined to Trinidad, and although Herr Stichel has examined my *H. ethilla* and pronounced them to be the same as Weymer's *H. sulphureus* from Thomar on the Rio Negro, I do not agree to this, as Weymer's figure in the "Iris" vi, t. iv, f. 8 (1893) is quite different. The *Protogonius* has only once been taken outside Trinidad, viz. in Cayenne, and this is Butler's type *P. ochraceus*. The *Tithorea*, *Protogonius* and *Heliconius* all conforming in this way is rather remarkable, as 400 miles south in British Guiana in a similar but many times stronger group, a *Tithorea* is only a wanderer, while a *Protogonius* and a corresponding *Dismorphia* are altogether absent. Trinidad is far more sunny, at least in the rainy season, than the forest region of Guiana, and has a considerably drier atmosphere in general.

There are several instances concerning the validity of species that are now proved and which will it is hoped be of interest and usefulness to the systematist and biologist alike. Whether one or two species of *Lycorca* occurred was for a long while a difficult question to answer, but with the present series there is only one answer—there is one, *Lycorca ceres*. *Lycorca atergatis* is in Trinidad only a form of *ceres*, and no line of demarcation is possible nor is it necessary. Northwards however the *ceres* form drops out and southwards the *atergatis* form vanishes. Another problem has been solved by Mr. F. W. Urich. He has bred from the same batch of eggs *Papilio anchisiades* and *Papilio theramenes*, and these two are one species. Further, he has bred me a good series from one batch of eggs of

*Papilio zeuxis*. The series in the males presents considerable variation, and several males would be called *Papilio alyattes*. Felder's description of ♀ *alyattes* is however not in accordance with any of the ♀♀ bred, and Felder's *alyattes* came from Venezuela, but it is a question if Felder's ♀ *alyattes* is not a ♀ of something else, or at any rate not the ♀ of what he named *alyattes* ♂.

There is still a very difficult question that I hope my friend Mr. Urich will try and clear up by breeding, *i. e.* the *Heliconius melpomene* question. Riffarth's monograph on the genus *Heliconius* would make out that there are at least three of these red and black *Heliconius* species—*H. hydara*, *H. euyrades*, and *H. melpomene*, with probably *H. viculata* added. For want of more material I have not been able to see how far this coincides with the evidence of the genitalia.

There are other questions the solution of which are not yet certain. In the Lycænidæ *Tmolus beon*, *Tmolus isobeon*, and *Tmolus bactra* offer considerable material for study. Have we here three or one species? or are these different geographical forms of the same species? and is this a parallel case to *Lycorea ceres* and *Lycorea atergatis*? Such questions as these can only be proved by breeding from the egg. I must confess that I was inclined to disagree with Godman and Salvin in calling them all the same species, namely *beon*, as they do in the "Biologia Centrali Americana," but their long series includes so many forms, that it looks as if there was but one very variable species. *Beon* from British Guiana is very constant and rather different from any form in Trinidad. In the Appendix by Mr. J. Guppy will be found some interesting notes on the life histories of several species, especially so are those on the Erycinids, *Theope eudocia* and *Nymphidium molpe*. It is very possible that many Erycinids have the same habit of living on friendly terms with different species of ants, as, if the reverse were the case, doubtless some species would be in danger of extermination, and be outnumbered by the ants.

To Mr. F. A. Heron, at the South Kensington Museum, I have to tender my very best thanks for help in many ways, besides those resident entomologists abroad who have been already mentioned. To Mr. F. Du Cane Godman I am indebted for access to his superb collection and for personal help in naming the more obscure species.

## Family NYMPHALIDÆ.

## Subfamily DANAINÆ.

## 1. DANAIS ARCHIPPUS.

*Papilio archippus*, Fab., Ent. Syst., iii, 1, p. 49, n. 50 (1793).

The specimens from Trinidad are very richly dark coloured and have the marginal band to the hind-wing very dark and very little spotted.

*Range.* Throughout the AMERICAN CONTINENT and WEST INDIES.

## 2. DANAIS ERESIMUS.

*Papilio eresimus*, Cram., Pap. Exot., ii, t. 175, G.H. (1779).

Specimens from Trinidad are uniformly with a dark broad marginal band to hind-wing. Similar specimens occur in other West Indian islands and in Venezuela. Brazilian specimens have the band extremely narrow, frequently almost obsolete.

*Range.* VENEZUELA ; GUIANA.

## Subfamily LYCOREANÆ.

The inclusion of the genera *Lycorea* and *Ituna* in the subfamily *Danainæ* does not appear satisfactory on the following grounds. There is no raised patch in the male on vein 2 of the hind-wing ; the cell is much larger and longer ; the wings are much more elongated and the antennæ have the last joints yellow.

The subfamily forms a sort of link between *Danainæ* and *Ithomiinæ*.

## 3. LYCOREA CERES. (Pl. XVIII, figs. 4, 4a.)

*Papilio ceres*, Cram., Pap. Exot., i, t. 90, A. (1779).

*Range.* For the type GUIANA ; AMAZONS.

Var. *ATERGATIS*, Doubl. and Hew., Gen. D.L., t. 16, f. 1 (1847).

*Range.* CENTRAL AMERICA ; VENEZUELA.

After considerable investigation there can be no doubt that *L. atergatis* is only a form of *ceres* (maintaining *ceres* as the type, because of its having been described so long ago and not because it is scientifically the older species). In Trinidad *ceres* and *atergatis* so run into one another that they must be all of one stock. Going southwards the *ceres*

form becomes fixed, and even in British Guiana the *atergatis* form never occurs. While, on the other hand, going northward into Panama one finds *atergatis* only. In Cuba and Haiti a form of *ceres* has been retained in *L. demeter*, which has the characteristic markings of *ceres* but with the ground-colour much darkened. Kirby, in his catalogue, p. 18, assigns to *demeter* the same place as I have hinted, but puts *atergatis* as a var. of *cleobæa*, Godt. *L. demeter* may or may not be quite removed from *ceres*, but *atergatis* is the same thing in Trinidad, and only further north does it become a definite form. It should be mentioned that Cramer's *ceres* is not the usual *ceres* form in British Guiana, where the outer marginal half of the hind-wing has most often become blackened.

## Subfamily ITHOMIINÆ.

## 4. TITHOREA MEGARA. (Pl. XVIII, figs. 3—3b.)

*Heliconius megara*, Godt., Enc. Méth., ix, p. 223, n. 59 (1819).

Found abundantly in Trinidad, particularly in the vicinity of Port of Spain. In the Maraval, St. Ann's, and Maracas Valleys I have met with it in numbers.

Range. BRAZIL (?).

## 5. MECHANITIS VERITABILIS.

*Mechanitis veritabilis*, Butl., Cist. Ent., i, p. 155 (1873).

An abundant species throughout the Island.

Range. COLOMBIA.

This is nothing more than a well-defined form of *M. polymnia*. In fact one of my specimens is undoubtedly *polymnia*, while another has the yellow band beyond the cell much broader than usual, the yellow patch within the cell changed into the ground-colour.

## 6. MELINÆA TACHYPETIS.

*Melinæa tachypetis*, Feld., Reise Nov. Lep., iii, p. 355, n. 502 (1867).

This must be a very rare species in the Island if it really occurs and some mistake has not been made. Given by W. M. Crowfoot.

Range. VENEZUELA.

7. *ÆRIA* AGNA.

*Æria agna*, Godm. and Salv., Biol. Centr. Am., Rhop., i, p. 15.

Never, as far as I can ascertain, a common species here. I have some from near Port of Spain.

*Range.* CENTRAL AMERICA ; ECUADOR ; VENEZUELA ; COLOMBIA.

8. *CERATINIA* EUCLEA.

*Heliconia euclea*, Godt., Enc. Méth., ix, p. 212, n. 49 (1819).

Found commonly in Cascade Valley in May 1898 (*W. J. Kaye*).

*Range.* VENEZUELA ; COSTA RICA ; COLOMBIA ; GUIANA.

9. *ITHOMIA* LAGUSA.

*Ithomia lagusa*, Hew., Ex. Butt., I, t. 15, f. 89 (1855).

Included by Mr. Crowfoot. I have not been able to trace a Trinidad specimen.

*Range.* COLOMBIA.

10. *ITHOMIA* PELLUCIDA.

*Ithomia pellucida*, Weymer, S.E.Z. 1875, p. 374, t. 2, f. 2.

To be found in many parts of the Island, but not abundantly as a rule. Mr. Caracciolo has secured a long series.

*Range.* VENEZUELA ; COLOMBIA.

11. *PTERONYMIA* NISE.

*Papilio nise*, Cram., Pap. Ex., iii, t. 231 (1782).

A single specimen only. The species is however exceedingly local in my experience in Brit. Guiana, and probably the head-quarters in Trinidad have not been discovered.

*Range.* VENEZUELA ; CAYENNE ; BRIT. GUIANA.

12. *HYMENITIS* OCALEA.

*Ithomia ocalea*, Doubl. and Hew., Gen. D.L., t. 18, f. 4 (1847).

Plentiful in the Cascade Valley.

*Range.* VENEZUELA.

## 13. HYMENTIS ANDROMICA.

*Ithomia andromica*, Hew., Ex. Butt., i, 7, f. 38.

Evidently very local or scarce.

Range. VENEZUELA.

Subfamily BRASSOLINÆ.

## 14. OPSIPHANES FABRICII.

*Opsiphanes fabricii*, Boisd., Lép. Guat., p. 54 (1870).

Not rare; in common with all the Brassolinæ found flying more frequently at dusk.

Range. GUIANA; COLOMBIA.

## 14a. OPSIPHANES CASSIÆ. (Pl. XVII, figs. 2—2b.)

*Papilio cassiæ*, Linn., Mus. Ulr., p. 265 (1764).

Range. SOUTH AMERICA.

## 15. CALIGO SALTUS, sp. n. (Pl. XVII, figs. 1—1f.)

Allied to *Caligo ilioneus* but easily separable by the much more steely-blue colour of both fore- and hind-wings. Fore-wing steely-blue beyond the cell and just touching it at the lower angle a broad pale-yellow band runs from the costa to just beyond nervure 1 b. This band is rather paler than the equivalent in *C. ilioneus* and is much less clearly defined in its edges being more obsolescent. Beyond the yellow band the colour is rich brown inclining to black. A white dot is situated between nervures 8, 9 close to the costa. Only rarely are two dots present as in *C. ilioneus*. The submarginal brownish band is very obsolescent in the ♂ and in the ♀ is much less well defined than in *C. ilioneus*. Hind-wing with the basal half of wing steely-blue shot with rich purplish-blue. The marginal half of wing brownish-black. The blue colour of the basal portion of the wing does not extend so far towards anal angle of wing as in its near ally. Under-side very variable and in the same direction as *C. ilioneus*.

Expanse 150—158 mm.

Not rare about cocoa estates but much less common than the following, and is to be found amongst denser undergrowth, as a rule.

## 16. CALIGO EURYLOCHUS.

*Papilio eurylochus*, Cram., Pap. Ex., i, t. 33, A, t. 34, A. (1775).

*Var. minor*, nov.

Fore-wing steely-blue with a very broad marginal black band

shaded internally with the general ground-colour; from the costa inwards to beyond middle of wing is an indication of a narrow ochreous band just before the broad black marginal band; on the costa it is strongly indicated and quickly merges in tone with the general colour though discernible to almost nervure 2. Between nervures 5, 6 a round black spot is traceable midway between end of cell and outer margin; two other similar black spots are usually present between nervures 6, 7 and 7, 8, the upper always much more distinct and blacker. Hind-wing similar to fore-wing, the marginal band heavier black and the ground-colour more intense and shot deep blue in the outer portion when held at certain angles. The outer margin between nervures 4 and 7, with greyish lunules. Under-side of fore-wing with the greyish shining scales extending to beyond nervure 2. Under-side of hind-wing with the large eye-mark almost circular with the white scales within the pupil forming a curved line and scarcely broken up into white dots except at extremities. The area above the eye-mark dark brown. This Trinidad form of *C. eurylochus* is usually smaller and is usually recognizable by the shot blue colour of the hind-wings not extending down to the anal angle. The apical spots and brownish band down from the tip of the costa is hardly ever present and is never so clear and distinct as in the mainland form of the species.

Common on most of the cocoa estates.

#### 17. ERYPHANIS POLYXENA.

*Papilio polyxena*, Meerb., Afb. Zeldz. Gew., t. 41 (1775).

Not rare near Port of Spain.

Range. COLOMBIA; BRAZIL.

#### 18. DYNASTOR DARIUS.

*Papilio darius*, Fab., Syst. Ent., p. 482, n. 173 (1775).

A specimen in the National Collection.

Range. TROPICAL SOUTH AMERICA.

Subfamily *MORPHINÆ*.

#### 19. MORPHO PELEIDES.

*Morpho peleides*, Koll., Denkschr. Akad. Wien., Math., Nat. Cl., 1, p. 356, n. 14 (1850).

Range. VENEZUELA; CENTRAL AMERICA.

Common in some of the valleys in the northern range of hills.



Subfamily ACRÆINÆ.

20. ACTINOTE ANTEAS.

*Acræa anteas*, Doubl. and Hew., Gen. D. L., t. 18, f. 5 (1848).

Range. COLOMBIA; VENEZUELA.

Given by Mr. Crowfoot in his list; I have not seen a Trinidad specimen.

21. ACTINOTE ALALIA.

*Papilio alalia*, Feld., Ent. Mon., iv, p. 105, n. 62 (1860).

Range. BRAZIL.

An uncommon species; flies in the sunshine in a somewhat lazy fashion. Taken at Tabaquite in June 1898 (*W. J. Kaye*).

Subfamily HELICONINÆ.

22. HELICONIUS ETHILLA.

*Heliconia ethilla*, Godt., Enc. Méth., ix, p. 219, n. 49 (1819).

Range. Opposite shore of VENEZUELA.

Fairly common in and around the Botanical Gardens at certain seasons. At the end of June and beginning of July 1901, I captured half-a-dozen specimens, mostly in perfect condition. There is a remarkable specimen in Mr. Godman's collection, which has all the yellow replaced by the ground-colour, and this probably represents the ancestral form, being very close to *metalilis* or *numismaticus* of Venezuela and other parts of the mainland.

23. HELICONIUS HYDARA.

*Heliconius hydara*, Hew., Ex. Butt., iv, Hel. t. 5, f. 14 (1867).

Range. PANAMA; COLOMBIA; VENEZUELA.

Identified by Herr Stichel.

24. HELICONIUS EURYADES.

*Heliconius euryades*, Riff., Gatt. Hel., p. 23, Berl. Ent. Z., xlv, p. 205 (1900).

Range. PERU; VENEZUELA; COLOMBIA (?).

Identified by Herr Stichel.

25. *HELICONIUS MELPOMENE*.

*Papilio melpomene*, Linn., Mus. Ulr., p. 232 (1764).

*Range.* GUIANA; BRAZIL; AMAZ. INF.; PERU; ECUADOR; COLOMBIA; VENEZUELA.

From Riffarth's "Die Gattung *Heliconius*" and the description therein I make out that true *melpomene* occurs.

It is quite impossible to say which of these black and red melpomene-like species are rare or otherwise. In the aggregate there are hundreds of individuals of this same coloration to be obtained even in the Botanical Gardens, while at about 1000 ft. behind Government House in late June probably thousands could be obtained.

26. *HELICONIUS VICULATA*.

*Heliconius viculata*, Riff., Gatt. Hel., p. 6, n. 29 (1900).

*Range.* VENEZUELA; SURINAM; BRAZIL, Amazons.

I have identified this by Riffarth's description, but in all such cases there must remain some doubt until long series of each of these closely-allied species are available for comparison.

27. *HELICONIUS RICINI*, Linn., Mus. Ulr., p. 227 (1764).

*Range.* TROPICAL SOUTH AMERICA.

Not at all common (*W. J. Kaye*) (*Caracciolo*).

Verdant Vale, Sangre Grande, and Maraval.

28. *HELICONIUS ERATO*.

*Papilio erato*, Linn., Mus. Ulr., p. 231 (1764).

*Range.* TROPICAL SOUTH AMERICA.

29. *HELICONIUS ANTIOCHUS*.

*Papilio antiochus*, Linn., Syst. Nat., 1. 2, Add., p. 1068, n. 12 (1767).

*Range.* TROPICAL AMERICA.

I have never seen a Trinidad specimen; but believe this to be the species that is rumoured to be obtained at the Pitch Lake at La Brea. Mr. Crowfoot includes the species in his list.

## 30. EUEIDES ISABELLÆ.

*Papilio isabellæ*, Cram., Pap. Exot., iv, t. 350, C. D. (1782).

Range. AMAZONS; GUIANA.

Probably locally common. A long series (*Caracciolo*), 1 ♂ (*W. J. Kaye*).

## 31. EUEIDES ALIPHERA.

*Heliconia aliphera*, Godart, Enc. Méth., ix, p. 246, n. 7 (1879).

Range. VENEZUELA; BRAZIL.

Locally common. I found it in considerable abundance at about 1000 ft., flying amongst *Colænis julia* on a rough hillside where there was quite a wealth of flowers. At other times the species is to be seen sailing with outstretched wings over the tops of cocoa trees, also frequently in company with the *Colænis*. The colour and markings of these two species are wonderfully alike, and one must suppose that they afford one another protection in sharing like dangers. Godman and Salvin record *E. aliphera* from Central America and draw attention to the similarity of *Colænis delila* (vol. i, p. 163), but do not state if the species are found together. *E. aliphera* from Central America is almost certainly a distinct species with much narrower black borders to both fore- and hind-wing; but it is interesting to note that *C. delila* is much more like these Central American "*aliphera*" than true Brazilian or Trinidadian *aliphera*.

Subfamily NYMPHALINÆ.

## 32. COLÆNIS PHÆRUSA.

*Papilio phærusa*, Linn., Mus. Ulr., p. 293 (1764).

Range. EQUATORIAL and CENTRAL AMERICA.

Mentioned by Crowfoot. The species must either be very rare or very local in Trinidad.

## 33. COLÆNIS JULIA.

*Papilio julia*, Fab., Syst. Ent., p. 509, n. 281 (1775).

Range. GUIANA; BRAZIL; ST. LUCIA, W.I.

An abundant species, more particularly at a small altitude of 500 to 1000 ft.

## 34. DIONE JUNO.

*Papilio juno*, Cram., Pap. Exot., iii, t. 215, B. C. (1782).

Range. CENTRAL AMERICA; BRAZIL; ST. LUCIA.

Not very common.

## 35. DIONE VANILLÆ.

*Papilio vanillæ*, Linn., Mus. Ulr., p. 306 (1764).

Range. WEST INDIES; GUIANA; SOUTHERN STATES; ARGENTINE.

An abundant species. The larva chiefly feeds on Guinea grass wherever introduced in preference to the various *passifloræ*, its native pabula.

## 36. PHYCIODES LIRIOPE.

*Papilio liriope*, Cram., Pap. Exot., i, t. 1. C. D. (1775).

Range. TROPICAL AMERICA.

Recorded by Crowfoot.

## 37. PHYCIODES CLAUDINA.

*Acræa claudina*, Esch., Kotzeb. Reise, iii, p. 212, t. 8, f. 18, a. b. (1821).

Range. AMAZONS.

Taken in May 1898 (*W. J. Kaye*); also in Nat. Coll. (*Hart*).

## 38. PHYCIODES LEUCODESMA.

*Eresia leucodesma*, Feld., Wien. Ent. Mon., v, p. 103, n. 77 (1861).

Range. VENEZUELA; COLOMBIA.

A very common species in many parts of the Island.

## 39. CHLOSYPNE SAUNDERSII.

*Synchlœe saundersii*, Doubl. and Hew., Gen. D. L., t. 24, f. 2 (1847).

Range. NICARAGUA to PARAGUAY.

Although a widely-spread and apparently generally common species, there is but a single record of a Trinidad specimen, namely, from Sangre Grande. The insect in question has the submarginal row of large orange spots very conspicuous and well defined.

40. HYPANARTIA LETHE.

*Papilio lethe*, Fab., Ent. Syst., iii, 1, p. 80, n. 250 (1793).

Range. MEXICO; VENEZUELA; ECUADOR; BRAZIL.

Not common. Port of Spain (*W. J. Kaye*).

41. JUNONIA GENOVEVA.

*Papilio genoveva*, Cram., Pap. Ex., iv, t. 290, E. F. (1782).

Range. WEST INDIES; MEXICO; HONDURAS; GUIANA.

Not very common in my experience, and found in nothing like the abundance in the other islands.

42. ANARTIA JATROPHE.

*Papilio jatrophe*, Linn., Mus. Ulr., p. 289 (1764).

Range. WEST INDIES; BRAZIL; GUIANA; VENEZUELA.

An abundant species, particularly frequenting dry weedy situations.

43. ANARTIA AMALTHEA.

*Papilio amalthea*, Linn., Mus. Ulr., p. 288 (1764).

Range. BRAZIL; VENEZUELA; GUIANA; PANAMA.

An abundant species delighting in damp places. These opposite habits in these two closely-related species are noteworthy.

44. CATONEPHILE NUMILIA.

*Papilio numilia* ♂, Cram., Pap. Ex., ii, t. 81, E. F. (1779).

*Papilio micalia* ♀, Cram., Pap. Ex., ii, t. 108, C. D. (1779).

Range. BRAZIL; COLOMBIA; GUIANA.

One ♂, 2 ♀ ♀, taken by Guppy.

NOTE.—One of these females would be classed as *numilia* (= *micalia*) and the other as *penthia*. It is exceedingly probable that *numilia* has a dimorphic female, as it is not likely that in an island such as Trinidad two female *Epicalias* taken together would be two different species. The males of *numilia* and *penthia* are identical, and I have therefore not recognised *penthia* as a species.

## 45. TEMENIS LAOTHÖE.

*Papilio laothöe*, Cram., Pap. Ex., ii, t. 132, A. B. (1779).

*Range.* BRAZIL; VENEZUELA; CENTRAL AMERICA.

The form *ariadne*, l. c. t. 180, E. F. (1779), also belonging to the Amazon region.

Never abundant, but pretty generally found in all the valleys in the Northern Range of hills.

## 46. DYNAMINE THESEUS.

*Eubagis theseus*, Feld., Wien. Ent. Mon., v, p. 106, n. 89 (1861).

*Range.* COLOMBIA; VENEZUELA.

A common species in the valleys round Port of Spain. I met with it commonly in Maracas Valley in June and July 1901.

## 47. DYNAMINE ARTEMISIA.

*Papilio artemisia*, Fab., Ent. Syst., iii, 1, p. 101, n. 313 (1793).

*Range.* CENTRAL AMERICA; NORTHERN BRAZIL; VENEZUELA; COLOMBIA.

Uncommon. Taken by *J. H. Hart* at Botanical Gardens and by *Mr. W. E. Broadway* at same place. *Maraval* (*C. W. Ellacombe*).

## 48. DYNAMINE MYLITTA.

*Papilio mylitta*, Cram., Pap. Ex., iii, t. 253, D. E. (1782).

*Range.* VENEZUELA; GUATEMALA; HONDURAS.

Less common than *D. theseus*.

## 49. DYNAMINE AGACLES.

*Papilio agacles*, Dalm., Anal. Ent., p. 47 (1823).

*Range.* CAYENNE; NORTHERN BRAZIL.

Recorded by Crowfoot.

[DYNAMINE EGÆA.

*Papilio egæa*, Fab., Syst. Ent., p. 496, n. 231 (1775).

This is a Jamaican species, and has been recorded from Trinidad in error (*W. J. K.*.)]

50. CALLICORE AURELIA.

*Callicore aurelia*, Guén., Mém. Phys. Gén., xxi, p. 385 (1872).

*Range?*

Local. My brother found the species in abundance flying round a certain tree at Verdant Vale.

In the Maraval Valley I have occasionally seen it. The *C. marchalii* recorded by Crowfoot is no doubt this species, and I have not hesitated to sink it therefore.

51. CATAGRAMMA CODOMANNUS.

*Papilio codomannus*, Fab., Spec. Ins., ii, p. 57, n. 253 (1781).

*Range.* BRAZIL.

Crowfoot records the species. I saw a couple of specimens in the St. Ann's Valley that I put down to be *Catagramma pitheas*, but they might almost equally well have been this species. Caracciolo has recently taken an undoubted *codomannus*.

52. HÆMATERA PYRAMUS.

*Papilio pyramus*, Fab., Spec. Ins., ii, p. 130, n. 590 (1781).

*Range.* BRAZIL; VENEZUELA.

Whether the insect found in Trinidad is *pyramus* is a little doubtful. The insect is much redder and may be distinct. At all events it is a well-marked form, which I propose to call *var. rubra*.

*Var. rubra*, nov. (Pl. XVIII, fig. 7.)

Fore-wing very red, the colour reaching right up to the base of wing as in *H. thysbe*, but shot with purplish-blue to a small extent. Hind-wing as in typical *pyramus*, with the red blotch narrow between the costa and vein 8, then suddenly much broader and curved fairly evenly round and not extending further down than vein 5. The shape of the blotch is rather variable, and is sometimes rather produced in the neighbourhood of vein 6. There is a slight purplish gloss as in fore-wing.

Mr. Godman has several similar specimens, one of which is from Trinidad.

At the end of June 1901 I found this insect abundant

in St. Ann's Valley. It frequents damp spots by streams, and when alarmed flies off rapidly and settles then on a branch of a tree near by.

## 53. GYNÆCIA DIRCE.

*Papilio dirce*, Linn., Mus. Ulr., p. 287 (1764).

*Range.* JAMAICA; BRAZIL; GUIANA.

Not very common.

This species, together with certain (? all) species of *Ageronia*, makes a loud clicking sound when flying. The flight is short and wild and generally a wheeling motion, returning quickly to some bare tree-trunk, where it settles with the wings folded, and head downwards.

## 54. AGERONIA FERENTINA.

*Papilio ferentina*, Godt., Enc. Méth., ix, p. 428, n. 248 (1823).

*Range.* VENEZUELA; PANAMA; MEXICO; HAYTI; BRAZIL.

Abundant locally.

This species always alights and sits on a bare tree-trunk, with the wings folded flat on to the trunk. Frequently eight or ten will be found thus on a single trunk. If alarmed they will fly off, and return probably to the same tree, but on the opposite side. I have more than once cautiously crept up, and as soon as the butterfly got alarmed it would *walk* round to the opposite side of the tree to which I was standing.

## 55. PERIDROMIA FERONIA.

*Papilio feronia*, Linn., Mus. Ulr., p. 283 (1764).

*Range.* BRAZIL; ST. LUCIA; ECUADOR.

Not nearly so common as *A. ferentina*, and partial to a lower elevation.

## 56. PERIDROMIA AMPHINOME.

*Papilio amphinome*, Linn., Syst. Nat., i, 2, p. 779, n. 176 (1767).

*Range.* BRAZIL.

Rare or very local.



57. PERIDROMIA ARETHUSA.

*Papilio arethusa*, Cr., Pap. Ex., i, t. 77, E. F. (1779).

*Range.* BRAZIL; VENEZUELA; MEXICO; BOLIVIA.

Recorded by Crowfoot.

58. DIDONIS BIBLIS.

*Papilio biblis*, Fabr., Syst. Ent., p. 505, n. 261 (1775).

*Range.* COLOMBIA; BRAZIL; DOMINICA; GUIANA.

A common species, particularly abundant in the Maraval Valley. The form in Trinidad is always with a narrow red band to hind-wing.

59. CYSTINEURA CANA.

*Cystineura cana*, Erichs., Schomb. Reisen, iii, p. 599 (1848).

*Cystineura coxiana*, Butl., P. Z. S., p. 713 (1901).

*Range.* ST. LUCIA; DOMINICA; GUIANA.

Very abundant in the neighbourhood of Port of Spain and excessively variable. In Mr. Crowfoot's list *Cystineura hypermnestra*, Hübn., is recorded, but there is scarcely a doubt that *C. cana* was the species which was intended to have been recorded.

60. PYRRHOGYRA TIPHA.

*Papilio tipha*, Linn., Mus. Ulr., p. 308.

*Range.* VENEZUELA; ST. LUCIA; BRAZIL.

Not common. At San Fernando in the railway cutting several were taken (June 1898, *W. J. Kaye*), and at Port of Spain I have seen one or two.

61. MEGALEURA CHIRON.

*Papilio chiron*, Fab., Syst. Ent., p. 452, n. 40 (1775).

*Range.* TROPICAL SOUTH AMERICA and CENTRAL AMERICA.

Frequent near streams. Maracas, common (*W. J. Kaye*).

## 62. MEGALEURA PELEUS.

*Papilio peleus*, Sulz., *Gesch. Ins.*, t. 13, f. 4 (1776).

*Range.* MEXICO; BRAZIL; HONDURAS.

Rare. Has the same habits as *M. chiron*, but is always more difficult to approach.

## 63. VICTORINA STENELES.

*Papilio steneles*, Linn., *Mus. Ulr.*, p. 218 (1764).

*Range.* W. INDIES; CENTRAL AMERICA; BRAZIL.

In my experience this is a far from common insect in Trinidad, and I have never seen anything approaching the abundance of the species in Jamaica, where it is to be taken in hundreds settling on the rotting mangoes in the Bath district.

## 64. HYPOLIMNAS MISIPPUS.

*Papilio misippus*, Linn., *Mus. Ulr.*, p. 264 (1764).

*Range.* INDIA; AFRICA; AUSTRALIA; GUIANA.

The occurrence of this cosmopolitan species is exceedingly interesting, as I have little doubt that there is no reason to suspect Crowfoot's record. The species can hardly be mistaken. Occurrences must be few and far between, as I have been unable to obtain the species, neither have correspondents succeeded in getting it. I have recently seen a good specimen, caught near the Pitch Lake.

## 65. ADELPHA IPHICLA.

*Papilio iphiclea*, Linn., *Mus. Ulr.*, p. 311 (1764).

*Larva* and *Pupa* described by Mrs. E. M. Swainson, *Jour. N. Y.*, 1901, p. 78.

*Range.* MEXICO; VENEZUELA; BRAZIL.

Not common.

## 66. ADELPHA CYTHEREA.

*Papilio cytherea*, Linn., *Mus. Ulr.*, p. 305 (1764).

*Range.* BRAZIL, Para, Rio Janeiro; COLOMBIA; ST. LUCIA.

Very common and generally distributed.

## 67. ADELPHA PLESAURE.

*Adelpha plesaure*, Hübn., Zutr. Ex. Schmett., pp. 231, 232 (1823).

Range. BRAZIL; COLOMBIA.

## 68. AGANISTHOS ODIUS.

*Papilio odius*, Fabr., Syst. Ent., p. 457, n. 60 (1775).

Range. TROPICAL SOUTH AMERICA; CENTRAL AMERICA; FLORIDA; JAMAICA; HAYTI; the last two producing the form *orion*.

Evidently never abundant. The form is always true *odius* with the narrow pointed yellow area present which is characteristic of the mainland; the forms in Hayti and Jamaica being very distinct with the more truncate yellow marking.

## 69. PREPONA DEMOPHON.

*Papilio demophon*, Clerck, Icones, t. 29, f. 2, t. 42, f. 3 (1764).

Range. AMAZONS.

This is probably the commonest species of the genus in the Island. I only once saw it myself in the Maraval Valley. Its habits are peculiar. It settles amongst low herbage and is not easily induced to rise, but shuffles about so that very soon the specimen becomes a wreck.

## 70. PREPONA ANTIMACHE.

*Morpho antimache*, Hübn., Verz. bek. Schmett., p. 49, n. 458 (1816).

Range. AMAZONS; BERMUDAS.

Uncommon. Maraval Valley (*W. J. Kaye*). Has a habit of settling amongst low herbage.

## 71. PREPONA DEMODICE.

*Nymphalis demodice*, Godart, Enc. Méth., ix, p. 408, n. 193 (1823).

Range. COLOMBIA; BRAZIL.

This magnificent species is included on the strength of Mr. Crowfoot's record. I have just received a good specimen from Sangre Grande, thus confirming the record.

## 72. ANÆA PHIDILE.

*Anæa phidile*, Hübn., Zutr. Ex. Schmett., ff. 905, 906  
(1837).

*Range.* BRAZIL.

Not rare in the Maraval Valley.

## 73. ZARETES ISIDORA.

*Papilio isidora*, Cram., Pap. Ex., iii, t. 235, A. B. E. F.  
(1782).

*Range.* NICARAGUA; COLOMBIA; BRAZIL.

Not a common species.

## 74. SIDERONE MARTHESIA.

*Papilio marthesia*, Cram., Pap. Ex., ii, t. 191, A. B.  
(1779).

*Range.* BRAZIL; GUIANA.

Not rare in the Maraval Valley. The females generally with a yellow ground-colour, shading off considerably into reddish, but never approaching the male in brilliance. Although not usually the case, in Trinidad the females are about as common as the males.

## 75. PROTOGONIUS OCHRACEUS. (Pl. XVII, figs. 3, 3a.)

*Protopogonius ochraceus*, Butl., P. Z. S., 1873, p. 773.

*Range.* CAYENNE.

Fairly frequent. It delights in a grassy slope, where sometimes two or three may be found gently fluttering together.

The remarkable sulphur colouring of so many of the Trinidad species is here very extraordinary, as it is the only species of the genus that has so much diverged from the typical brownish colour.

The extreme straw-coloured form in Trinidad is rather different from the darker-coloured type specimen from Cayenne. Whether one would be justified in separating this strongly-marked island form is open to doubt. The number of apical spots is greater in the Trinidad form.

Subfamily SATYRINÆ.

76. PIERELLA HYALINUS.

*Papilio hyalinus*, Gmel., Syst. Nat., , 5, p. 2259, n. 879 (1788).

*Pieris dracontis*, Hüb., Verz. bek. Schmett., p. 53, n. 500 (1816).

Range. GUIANA.

This species, better known as *Pierella dracontis*, is very common in suitable situations. In dark damp places it is always to be found flying low down and frequently beneath the low undergrowth such as ferns, etc. It is always difficult to approach, and has a most unusual flight.

77. EUPTYCHIA HESIONE.

*Papilio hesione*, Sulz., Gesch. Ins., p. 144, t. 17, f. 3, 4 (1776).

*Papilio ocirrhoe*, Fab., Gen. Ins., p. 260 (1777).

Range. COLOMBIA ; GUIANA.

One of the commonest species. It is abundant in all damp shady places.

78. EUPTYCHIA MYNCEA.

*Papilio myncea*, Cram., Pap. Ex., iv, t. 293, C. (1782).

Range. HONDURAS to BRAZIL.

Not rare near Port of Spain. The *Euptychia helle* recorded by Crowfoot was most likely this species.

79. EUPTYCHIA PENELOPE.

*Papilio penelope*, Fab., Syst. Ent., p. 493, n. 217 (1775).

Range. BRAZIL, Para.

Common at Verdant Vale (*S. Kaye*).

80. EUPTYCHIA RENATA.

*Papilio renata*, Cram., Pap. Ex., iv, t. 326, A. (1782).

Range. TROPICAL AMERICA.

At St. Ann's (*W. J. Kaye*); Verdant Vale (*S. Kaye*).

## [EUPTYCHIA SOSYBIUS.

*Papilio sosybius*, Fab., Ent. Syst., iii, 1, p. 219, n. 684 (1793).

This is probably an incorrect identification of Mr. Crowfoot's. The species is a Southern United States and Central American species.]

## 81. EUPTYCHIA HERMES.

*Papilio hermes*, Fab., Syst. Ent., p. 487, n. 195 (1775).

Range. TROPICAL AMERICA.

An abundant species in almost every kind of situation.

## 82. EUPTYCHIA ERICHTO.

*Euptychia erichto*, Butl., P. Z. S., 1866, p. 501, n. 124, t. 40, f. 12.

Range. BRITISH GUIANA.

A very uncommon species.

## 83. EUPTYCHIA CELMIS.

*Satyrus celmis*, Godt., Enc. Méth., ix, p. 489, n. 38 (1823).

Range. BRAZIL, Bahia.

Not rare. Botanical Gardens (*J. H. Hart*).

## 84. EUPTYCHIA CEPHUS.

*Papilio cephus*, Fabr., Syst. Ent., p. 528, n. 359 (1775).

*Papilio doris*, Cr., Pap. Ex., i, t. 8, B. C. (1775).

Range. AMAZONS.

Evidently an uncommon species in the Island.

1 ♂, Maraval Valley (*C. W. Ellacombe*).

1 ♂, St. Ann's Valley (*Native collector*).

## 85. EUPTYCHIA JUNIA.

*Papilio junia*, Cram., Pap. Exot., iv, t. 292, D. E. (1782).

Range. BRAZIL.

St. Ann's Valley (*Native collector*); Cascade Valley, May 19th, 1898 (*W. J. Kaye*).

86. EUPTYCHIA LIBYE.

*Papilio libye*, Linn., Syst. Nat., i. 2, p. 772, n. 146 (1767).

*Range.* BRAZIL, Amazons; COLOMBIA.

Recorded by Crowfoot.

87. EUPTYCHIA ARNÆA.

*Papilio arnæa*, Fab., Gen. Ins., p. 260 (1777).

*Range.* BRAZIL, Amazons; BRITISH GUIANA.

Very local in Trinidad. The only locality I know of is Verdant Vale, where my brother first found it in plenty in November 1895, and where I again took it, singly, in June 1898.

88. EUPTYCHIA BRIXIOLA.

*Euptychia brixiola*, Butl., Proc. Zool. Soc., 1866, n. 74, t. 40, f. 9.

*Range.* BRAZIL, Amazon region.

I took a ♂ and ♀ on June 29th, 1898, in the forest near the Palmiste River, Tabaquite. There can be no doubt as to the identity of this species after having carefully compared the two specimens with the fine series of *E. brixiola* in Mr. Godman's collection.

89. TAYGETIS VIRGILIA.

*Papilio virgilia*, Cram., Pap. Ex., i, t. 96, C. (1779).

*Range.* TROPICAL SOUTH AMERICA.

It is difficult to say how far this is a common species owing to its similarity on the wing to other species of the genus.

90. TAYGETIS ECHO.

*Papilio echo*, Cram., Pap. Ex., i, t. 57, C. D. (1779).

*Range.* BRAZIL.

Tolerably common in shady valleys.

91. TAYGETIS CLEOPATRA.

*Taygetis cleopatra*, Feld., Wien. Ent. Mon., vi, p. 176, n. 151 (1862).

*Range.* BRAZIL.

In similar situations to the preceding and about in the same numbers.

The *xenana*, Butl., I believe to be only the ♀ or a ♀ form of this species. The only difference is in the colour of the under-side, the markings are identical.

92. TAYGETIS ANDROMEDA.

*Papilio andromeda*, Cram., Pap. Ex., i, t. 96, A (1779).

Range. TROPICAL SOUTH AMERICA.

Rather commoner than either of the two previous species.

93. TAYGETIS PENELEA.

*Papilio penelea*, Cram., Pap. Ex., ii, t. 101, G. (1779).

Range. TROPICAL SOUTH AMERICA.

Very common in dark damp places.

Family ERYCINIDÆ.

Subfamily EUSELASIINÆ.

94. HELICOPIS ELEGANS, n. sp. (Pl. XVIII, fig. 6.)

Fore-wing very pale cream-coloured inclining to whitish; the basal area slightly brownish. A black marginal band, broad at apex, running to vein 4, thence to inner margin, of equal width and not extending inwards. Hind-wing brownish at base of the same colour as fore-wing; a rather narrower marginal band than is found in all other species in the genus and made up of three black lines interrupted in the middle by a large yellowish ochreous blotch in which are three or four black spots. There are no metallic markings on the upper-side. Under-side of fore-wing white slightly lemon-coloured at base, a black marginal band divides up at vein 4 into two black parallel lines. Under-side of hind-wing whitish with three post-median black lines, the inner one of which is partly duplicated. Between veins 2, 3; 3, 4; 4, 5; 5, 6 are metallic silvery spots; surrounding these and extending to almost the margin is a deep ochreous patch containing four more similar spots, and above these between veins 4 and 6 is a blackish mark.

Exp. 42 mm.

The species is nearest to *H. selene*, Feld.

One specimen in Nat. Coll. taken by Caracciolo.



## 95. PEROPHTHALMA TENERA.

*Mesosemia tenera*, Westw., Gen. D. L., p. 455, n. 21 (1851).

Range. BRAZIL; GUIANA; HONDURAS; VENEZUELA.

Common all round Port of Spain and at Verdant Vale (*W. J. Kaye*).

Subfamily LEMONIINÆ.

## 96. EURYBIA HALIMEDE.

*Limnas subtilis*, Hüb., Samm. Ex. Schmett. (1806-1816).

Range. NICARAGUA; COLOMBIA; BRAZIL.

One specimen in Nat. Coll. taken by W. E. Broadway.

## 97. MESOSEMIA CIPPUS.

*Mesosemia cippus*, Hew., Ex. Butt., ii, t. 6, f. 48 (1859).

Range. BRAZIL.

## 98. MESOSEMIA ANTÆRICE.

*Mesosemia antærice*, Hew., Ex. Butt., ii, t. 6, f. 52, 53 (1859).

Range. BRAZIL.

One specimen only.

## 99. MESOSEMIA METHION.

*Mesosemia methion*, Hew., Ex. Butt., ii, t. 8, f. 76 (1860).

Range. BRAZIL.

One specimen, June 1898 (*W. J. Kaye*).

## 100. CREMNA EUCHARILA.

*Cremna eucharila*, Bates, Trans. Ent. Soc., Ser. iii. (1867), p. 543.

Range. AMAZONS.

Apparently uncommon.

## 101. CREMNA ACTORIS.

*Papilio actoris*, Cram., Pap. Exot., i, t. 93, D (1779).

Range. SURINAM.

Not common.

## 102. ZEONIA CHORINÆUS.

*Papilio chorinæus*, Cram., Pap. Exot., i, t. 59, A.  
(1779).

*Range.* BRITISH GUIANA.

St. Ann's Valley in June 1898 and in July 1902 (*W. J. Kaye*). The specimens (several) were taken off the same bush, evidently a sign of extreme localness. The species rests on the outside leaves of the bushes in the hot sunshine.

## 103. DIORRHINA PERIANDER.

*Papilio periander*, Cram., Pap. Exot., ii, t. 188, C.  
(1779).

*Range.* BRAZIL; VENEZUELA; GUIANA.

Found in several of the valleys in June 1898, and at Maracas in July 1901. The ♀ is apparently much scarcer than the ♂ (*W. J. Kaye*).

## 104. LYMNAS IARBUS.

*Papilio iarbus*, Fab., Mant. Ins., ii, p. 83, n. 749  
(1787).

*Range.* CENTRAL AMERICA; VENEZUELA.

Very common near Port of Spain. Frequently it is to be observed fluttering against the roof of one's verandah.

## 105. LYMNAS XARIFA.

*Lymnas xarifa*, Hew., Ex. Butt., i, Lymn., t. 1, f. 1  
(1852).

*Range.* VENEZUELA.

Evidently rare. Only two specimens from Botanical Gardens (*W. J. Kaye*).

## 106. CRICOSOMA LUCIANUS.

*Papilio lucianus*, Fab., Ent. Syst., iii, 1, p. 313, n. 185  
(1793).

*Range.* VENEZUELA.

One from Tunapuna.

107. CRICOSOMA PSEUDOCRISPUS.

*Lemonias pseudoerispus*, Westw., Gen. D. L., p. 459, n. 27 (1851).

*Range.* BRAZIL; PANAMA; COLOMBIA.

Taken in Morrison Valley, July 1st, 1901, 2 ♂♂ (*W. J. Kaye*). Botanical Gardens (*J. H. Hart*).

108. CRICOSOMA COCCINEATA, n. sp. (Pl. XVIII, fig. 10.)

Fore-wing vermilion red with the inner half of the wing spotted with black; the discoidal spot is largest of all. In the centre of cell is a pair of spots and at the base a single spot; a marginal series of spots becoming more distinct towards costa and a subterminal line of black dots. Margins of wing and fringes black. Hind-wing as fore-wing; the post-median row of black spots strongly angled between veins 3 and 4. Abdomen red.

Exp. 28 mm.

Taken in the forest near Tabaquite in June 1898 (*W. J. Kaye*).

109. MESENE PHAREUS.

*Papilio phareus*, Cram., Pap. Exot., ii, t. 170, C. (1779).

*Range.* VENEZUELA; BRAZIL.

Evidently very local. Frequently found on deserted sugar estates.

110. MESENE SAGARIS.

*Papilio sagaris*, Cram., Pap. Exot., i, t. 83 D. (1779).

*Range.* BRAZIL.

One specimen only from Verdant Vale, November 1895 (*S. Kaye*).

111. CHARIS AVIUS.

*Papilio avius*, Cram., Pap. Exot., i, t. 92 B. (1779).

*Range.* TROPICAL AMERICA.

112. CHARIS ARGYRODINES.

*Charis argyrodines*, Bates, E. M. M., iii, p. 154, n. 112 (1866).

*Range.* CENTRAL AMERICA; VENEZUELA; BRAZIL.

Probably other closely allied species may occur but are overlooked.

## 113. ANTEROS FORMOSUS.

*Papilio formosus*, Cram., Pap. Exot., ii, t. 118, G. (1779).

*Range.* BRAZIL; COLOMBIA.

Evidently scarce or very local.

## 114. SAROTA GYAS.

*Papilio gyas*, Cram., Pap. Exot., i, t. 28, F. G. (1775).

*Range.* BRAZIL; COLOMBIA.

Once in St. Ann's Valley in June 1898 (*W. J. Kaye*).

## 115. EMESIS LUCINDA.

*Papilio lucinda*, Cram., Pap. Exot., i, t. 1, E. F. (1775).

*Range.* TROPICAL AMERICA.

Only single specimens.

## 116. EMESIS FASTIDIOSA.

*Emesis fastidiosa*, Mén., Cat. Mus. Pet. Lep., i, p. 90, t. 3, f. 5 (1855).

*Range.* BRAZIL.

Only single specimens.

## 117. EMESIS FATIMA.

*Papilio fatima*, Cram., Pap. Exot., iii, t. 271, A. B. (1782).

*Range.* TROPICAL SOUTH AMERICA.

## 118. EMESIS AURIMNIA.

*Emesis aurimnia*, Bdv., Lép. Guat., p. 24 (1870).

*Range.* GUATEMALA; PANAMA; VENEZUELA; PARAGUAY.

A single specimen considerably worn, but sufficiently recognisable as to assign it to this species. Taken at about 500 feet behind Government House end of June 1901 (*W. J. Kaye*).

## 119. EMESIS FUROR.

*Emesis furor*, Butl., Cist. Ent., i, p. 104 (1872).

*Range.* BRAZIL; COSTA RICA.

120. EMESIS GUPPYI, n. sp. (Pl. XVIII, fig. 9.)

Fore-wing dull dark brown with several indications of indistinct darker brown lines. Within the discoidal cell these are most apparent and four short marks are discernible besides the linear mark at the end of the cell. A broad paler brown band beyond the middle from costa to tornus bordered on either side with deep brown. Marginal portion of wing uniformly dark brown. Hind-wing of the same ground-colour as fore-wing with numerous darker transverse lines; the three outer ones complete and the inner ones stopping half-way across the wing. Under-side of fore-wing ochreous with the post-medial band yellow shading off exteriorly into the ground-colour, and bordered interiorly with a dark brown line. Under-side of hind-wing ochreous with the same markings as on the upper-side.

Exp. 32 mm.

Taken in June 1898, probably near Port of Spain. There is a specimen of this same species, only somewhat larger and better coloured, in Mr. Godman's collection from Chinchicua, Colombia.

121. RIODINA LYSIPPUS.

*Papilio lysippus*, Linn., Mus. Ulr., p. 332 (1764).

Range. BRAZIL; VENEZUELA; COLOMBIA.

Recorded by Crowfoot. Probably very local, as I have never seen a Trinidad specimen.

122. LASAIA MERIS.

*Papilio meris*, Cram., Pap. Exot., iv, t. 366.

Range. TROPICAL AMERICA.

Of fairly frequent occurrence.

123. THAROPS MENANDER.

*Papilio menander*, Cram., Pap. Exot., iv, t. 334, C. D. (1782).

Range. BRAZIL, Amazons.

One specimen at Verdant Vale in June 1898 (*W. J. Kaye*).

124. EUCHENAIS ARISTUS.

*Papilio aristus*, Stoll, Suppl. Cram. Pap. Exot., t. 39, f. 4, 4c (1787).

*Range.* GUIANA ; BRAZIL.

Attached to dark places in the forest.

125. THISBE IRENÆA.

*Papilio irenæa*, Cram., Pap. Exot., iv, t. 328, C. D.  
(1782).

*Range.* GUIANA ; BRAZIL, Amazons.

Not uncommon ; flies high up round the tree-tops, and is difficult to approach.

126. NYMPHIDIUM CALYCE.

*Nymphidium calyce*, Feld., Wien. Ent. Mon., vi, p. 72,  
n. 41 (1862).

*Range.* BRAZIL, Amazons.

Not rare ; flies higher up than the smaller more fragile species.

127. NYMPHIDIUM LAMIS.

*Papilio lamis*, Cram., Pap. Exot., iv, t. 335, F. G.  
(1782).

*Range.* SURINAM ; BRAZIL.

128. NYMPHIDIUM CACHRUS.

*Papilio cachrus*, Fabr., Mant. Ins., ii, p. 78, n. 715  
(1787).

*Range.* GUIANA.

About the commonest species of the genus.

129. NYMPHIDIUM MOLPE.

*Limnas subtilis molpe*, Hübn., Samml. Ex. Schmett  
(1806-1810).

*Range.* GUIANA ; BRAZIL, Amazons.

An abundant species.

Larva on Cassia. See Appendix.

130. NYMPHIDIUM AZAN.

*Nymphidium azan*, Doubl., Gen. D. L., t. 73, f. 5 (1851).

*Range.* BRAZIL.

An uncommon species.

131. NYMPHIDIUM MANTUS.

*Papilio mantus*, Cram., Pap. Exot., i, t. 47, F. G. (1779).

Range. BRAZIL; VENEZUELA; GUIANA.

Taken in the Botanical Gardens in May 1898 (*W. J. Kaye*).

I have seen several from Sangre Grande.

132. SYNARGIS ABARIS.

*Papilio abaris*, Cram., Pap. Exot., i, t. 93, C. (1779).

Range. GUIANA; BRAZIL, Amazons.

One specimen only from Verdant Vale, June 1898.

I have revived the genus *Synargis* of Hübner to take this species. The type of *Synargis* was *lytia*, a species like *abaris* with a sexually different facies in the ♀. The remaining species with ♀♀ differing from the ♂♂ all fall into a group by themselves and have a far stronger flight than the typical species of *Nymphidium*, they have broader wings in the ♀ and have a less acute outer margin with the costa. *Abaris* really stands out by itself with *lytia*, *orestes*, *artos*, *apame*, and others forming a group by themselves with much more ample wings, and with the hind margin of the ♀ rounded and not angled as in *abaris*.

133. THEOPE THOOTES.

*Theope thootes*, Hew., Ex. Butt., ii, t. 1, f. 9, 10 (1860).

Range. BRAZIL, Amazons.

Once in Cascade Valley in May 1898 (*W. J. Kaye*).

134. THEOPE FOLIORUM. (Pl. XVIII, fig. 2.)

*Theope foliorum*, Bates, Journ. Linn. Soc., Zool., ix, p. 407 (1868).

Range. BRAZIL, Amazons.

I am unable to distinguish *punctipennis* of Bates from *foliorum*.

Not rare. I netted several in June 1901, in St. Ann's Valley, and as the larva lives on cocoa, it is probably common if properly searched for.

The myrmecophilous habits of this and the succeeding species, as recorded by Mr. J. Guppy in the Appendix

are full of interest and give a clue as to the "modus vivendi" of these larvæ amongst the very numerous ants which infest their food plant.

135. THEOPE EUDOCIA. (Pl. XVIII, figs. 1—1d.)

*Theope eudocia*, Doubl. and Hew., Gen. D. L., t. 70, f. 4 (1851).

*Range.* BRAZIL, Amazons.

Mr. Guppy bred a single specimen from larva found on cocoa. It is of the form with the blue patches on the apical area.

Larva on cocoa. See Appendix.

136. ISAPIS AGYRTUS.

*Papilio agyrtus*, Cram., Pap. Ex., ii, t. 123, 13. C. (1779).

*Range.* SURINAM; BRAZIL, Amazons.

Family *LYCÆNIDÆ*.

137. CHILADES HANNO.

*Papilio hanno*, Stoll, Suppl. Cram. Pap. Exot., t. 39, f. 2 (1790).

*Range.* FLORIDA to S. BRAZIL and WEST INDIES.

Very common in dry grassy places.

SYNTARUCOIDES, n. gen.

Head medium sized; antennæ less than half the length of costa; palpi slender, the second joint slightly hairy on the under-side; the third joint of nearly equal thickness only slightly more slender, slightly down-curved. Fore-wing a little elongated, the apex not pointed; outer margin evenly curved, inner margin straight; nervures 10, 11 fused on costa closely approximated for part of their length and becoming separate at their origins. Hind-wing rather ample in ♂, more narrow in ♀, with the costa curved at base and almost straight for remaining length, apex greatly curved and outer margin gently curved. No tails to outer margin.

Type *Papilio cassius*, Cr,

138. SYNTARUCOIDES CASSIUS.

*Papilio cassius*, Cram., Pap. Ex., i, t. 23, C. D. (1775).

*Range.* JAMAICA; MEXICO; ST. LUCIA.



Less common than preceding, but found in the same situations.

139. CALLIPSYCHE THIUS.

*Hyrcus thius*, Hüb., Zutr. Ex. Schmett, ff. 743, 744 (1832).

*Range.* BRAZIL.

Recorded by Crowfoot.

POLYNIPHES, n. gen.

Fore-wing with the costa very strongly arched, apex rounded, and outer margin much curved. The discoidal cell very large and bowed out above and below. Discocellulars strongly angled. In the ♂ the whole of the cell with the exception of the basal portion is occupied with a band of brownish-black scales. Antennæ very slightly chequered on the under-side only and fairly stout for a Lycaenid. Palpi upturned; the third joint very pointed and ending in a fine bristle. Fore-tibia strongly spined.

Type *Thecla dumenilii*, Godt.

140. POLYNIPHES DUMENILII.

*Thecla dumenilii*, Godart, Enc. Méth., ix, p. 677, n. 187 (1823).

*Thecla argiva*, Hew.

*Range.* VENEZUELA.

I have twice taken this species near Port of Spain. It can easily be mistaken on the wing for *Tmolus albata*.

141. TMOLUS ECHION.

*Papilio echion*, Linn., Syst. Nat., i, 2, p. 788, n. 224 (1767).

*Range.* VENEZUELA; BRAZIL, Bahia, Rio Janeiro.

Recorded by Crowfoot. I have not seen Trinidad specimens. In the Hewitson collection specimens of *crobus*, Cramer, are named *echion*; Crowfoot may have determined specimens from this collection, and it may be that the true *echion*, Linné, does not occur. On the other hand, there is no reason to suppose the non-occurrence of any Venezuelan species.

142. *TMOLUS BEON*.

*Papilio beon*, Cram., Pap. Ex., iv, t. 319, B. C. (1782).

Range. EASTERN BRAZIL; VENEZUELA.

It is very difficult to say whether we have one or more species to deal with. *Tmolus bactra*, Hew., looks distinct from *beon*, but it may only be a form of it. The amount of blue on the hind-wing cannot be considered as ever constant. We know that in certain Palearctic *Lycænidæ* the first brood has often much bluer ♀♀ than the second brood, and some localities never yield a blue-tinged ♀ at all. The red inner edge of the transverse line on the under-side of the fore-wing of *beon* fades considerably with age, and some specimens (if they are undoubtedly *beon*) have hardly a trace of the red colouring. My own series is composed of four large males taken by my brother at Verdant Vale in the autumn of 1895, and which scarcely have any blue on the fore-wing except on the inner margin; five ♂♂ and two ♀♀ are *beon* as figured by Cramer; one ♂ is the *bactra* of Hew.; and one ♂ is very like typical *beon*, but with much less blue on the hind-wing, while one is exactly like *beon* on the upper-side but has no trace on the under-side of the red edging to the transverse line. The species is exceedingly abundant nearly everywhere. It should perhaps be added that some specimens have a different lustre to the blue colouring on the hind-wing. The specimens alluded to from Verdant Vale are very pale blue and not nearly so lustrous as the others.

143. *TMOLUS UNILINEA*, n. sp.

Upper-side of both fore- and hind-wing extremely like *crolus*, Cr., the brand on the discocellulars of fore-wing is however larger and browner in colour. Under-side white; fore-wing with a line composed of brownish-yellow spots commencing immediately below costa and finishing at nervure 2, the upper spots very small, the lower ones gradually becoming larger; outer margin just slightly shaded with greyish. Hind-wing with a large orange blotch just above the cell between nervures 7, 8, an elongated blotch between nervures 4 and 6, a small elongated spot immediately below the cell and a further small spot immediately above nervure 1b. Near the outer margin between nervures 2, 3, is a yellow spot with a black centre. At anal angle there is some faint yellowish colour.

Exp. 30 mm.

Described from a specimen in the British Museum sent by H. Caracciolo.

144. *TMOLUS ALBATA.*

*Thecla albata*, Feld., Reise Nov. Lep., ii, p. 261, 1, n. 310, t. 32, f. 17, 18 (1865).

*Range.* VENEZUELA.

Fairly frequent near the Botanical Gardens, in St. Ann's Valley.

145. *TMOLUS STAGIRA.*

*Thecla stagira*, Hew., Ill. D. L., n. 161, t. 39, f. 120, 121, t. 43, f. 167 (1867).

*Range.* SOUTH AMERICA.

Recorded by Crowfoot.

146. *TMOLUS TEPHRAEUS.*

*Bithys tephraeus*, Hüb., Zutr. Ex. Schmett, f. 959, 960 (1837).

*Range.* VENEZUELA ; HONDURAS ; BRAZIL, Amazons.

Recorded by Crowfoot.

147. *TMOLUS ERGINA.*

*Thecla ergina*, Hew., Ill. D. L., p. 105, n. 137, t. 43, f. 170, 171 (1867).

*Range.* CAYENNE ; VENEZUELA.

Recorded by Crowfoot.

148. *TMOLUS CROLUS.*

*Papilio crolus*, Cram., Pap. Ex., iv, t. 333, G. H. (1782).

*Range.* HONDURAS to BRAZIL (Amazon region).

Very common. Appears to be attached to orange trees.

149. *TMOLUS CELMUS.*

*Papilio celmus*, Cram., Pap. Ex., i, t. 55, G. H. (1779).

*Range.* BRAZIL.

A specimen from Trinidad in the National Collection, and another (a ♀) in my own collection.

150. *CALLICISTA MULUCHA*.

*Thecla mulucha*, Hew., Ill. D. L., n. 81, t. 38, f. 117 (1867).

*Range.* BRAZIL, Amazons, Pernambuco.

At the end of June 1901, on the hills behind Government House (*W. J. Kaye*).

151. *TMOLUS PALEGON*.

*Papilio palem*, Cram., Pap. Ex., iii, t. 282, C. D. (1782).

*Range.* VENEZUELA ; BRAZIL.

A single specimen in May 1898, at Tabaquite (*W. J. Kaye*); also recorded by Crowfoot.

152. *TMOLUS TALAYRA*.

*Thecla talayra*, Hew., Desc. Lyc., p. 1, n. 3 (1868).

*Range.* BRAZIL.

A single ♀ from Sangre Grande. It is likely that this species is not congeneric with *Tmolus*.

153. *TMOLUS PERDISTINCTA*, n. sp. (Pl. XVIII, fig. 8.)

Upper-side of both wings like *Tmolus beon* or of one of the forms of that species. Fore-wing dark brown. A blue streak on the inner margin from base beyond middle, and above the streak to the lower end of cell is a large patch of dull greenish-blue slate colour. Hind-wing with the costal portion broadly brown; the dull blue colour not extending above the cell nor to the outer margin except near tornus. A conspicuous brick-red spot at anal angle. Under-side of fore-wing pale brownish with a transverse line beyond middle not reaching to inner margin, brown edged exteriorly with dirty whitish. Under-side of hind-wing pale brownish with a conspicuous post-medial transverse broken line of white marks edged interiorly with blackish. A large black spot at anal angle and a small one set in bright red between veins 2, 3. An indication of a similar mark between veins 3, 4.

Expanse 27 mm.

Probably taken at Tabaquite in May 1898 (*W. J. Kaye*).

154. *CALLICOPIS CALUS*.

*Polyommatus calus*, Godt., Enc. Méth., ix, p. 640, n. 83 (1823).

Range. COLOMBIA ; VENEZUELA ; BRAZIL.

Two or three specimens from Sangre Grande.

155. CALLICOPIS DEMONASSA.

*Thecla demonassa*, Hew., Ill. D. L., Lyc., p. 31, n. 65 (1868).

Range. VENEZUELA.

Several found at end of May 1898 in the Botanical Gardens, fluttering over a small patch of weeds (*W. J. Kaye*).

156. CALLICOPIS HESPERITIS.

*Callicopsis hesperitis*, Butl. and Druce, Cist. Ent., i, p. 107 (1872).

Range. COSTA RICA ; MEXICO ; COLOMBIA ; GUIANA ; BRAZIL.

Crowfoot gives this species. I have not traced a Trinidad specimen, but the species is probably overlooked.

157. BITHYS DINDYMUS.

*Papilio dindymus*, Cram., Pap. Ex., i, t. 46, F. G. (1776).

Range. BRAZIL, Amazons.

Found commonly amongst the orange trees in the Botanical Gardens.

SIDERUS, n. gen.

Fore-wing with the costa very strongly arched at base and very straight thence to apex. Outer margin bluntly angled at middle. Inner margin straight. Discoidal cell very short with an almost circular dull black band in the ♂ lying over the upper end of the cross bar. A portion of the band lies within the cell and is more brown than black. Vein 2 from beyond middle of cell; 3 and 4 from just beyond the end; 5 from middle of discocellulars which are very oblique, the upper one much the longest; vein 6 from before upper angle; 7 from upper angle; 8 from just beyond angle of cell. Palpi with the 3rd joint slender and rather short, porrect; the 2nd joint just visible when viewed from above.

Type *S. parvinotus*.

158. SIDERUS PARVINOTUS, n. sp.

Fore-wing much like *Bithys dindymus* except for the shape of the band. Dark shining blue with black only on the outer margin and

none on the costa or only at the extreme margin. Hind-wing of the same colour as fore-wing, the blue reaching almost to costa and without any distinct patch of black. Inner margin iron-blue. Under-side of fore-wing dirty white with a broken line of pure white spots beyond middle from costa to vein 2. Under-side of hind-wing dirty white with a post-medial irregular line of white marks. A black spot at anal angle exteriorly edged with orange; and between veins 2, 3 is a large reddish-orange spot encasing a black point on the lower side.

Exp. 30 mm.

Taken in May 1898 at the Botanical Gardens (*W. J. Kaye*).

#### IASPIS, n. gen.

Palpi small, the 3rd joint visible from above. Fore-wing with the costa abruptly arched from base for a short distance; outer margin almost straight. Vein 5 from much nearer 4 than 6; vein 3 from close to lower angle of cell. Veins 7, 8 given off from the same place, beyond the cell is an oblong band of smooth black scales in the ♂. Discocellulars greatly curved inwards and following the outline of the band. Hind-wing with the upper discocellular slightly acute; lower discocellular forming almost a right angle. Vein 5 about equidistant from 4 and 6. Vein 7 given off long before the end of cell. Inner margin of wing rounded. A medium length tail at the extremity of vein 2 and a shorter one at vein 3.

Type *Symmachia temesa*, Hew.

#### 159. IASPIS TEMESA.

*Symmachia temesa*, Hew., Ill. D. L., p. 1, n. 2 (1868).

Range. BRAZIL, Amazons; CAYENNE.

One or two only from Sangre Grande in the interior of the Island.

#### 160. OENOMAUS ORTYGNUS.

*Papilio ortygnus*, Cram., Pap. Ex., iii, t. 243, B. (1782).

Range. HONDURAS; BRAZIL, Amazon region.

Fairly common round Port of Spain.

#### 161. PSEUDOLYCENA MARSYAS.

*Papilio marsyas*, Linn., Mus. Ulr., p. 315 (1764).

Range. BRAZIL; VENEZUELA; ARGENTINA.

Sometimes found commonly, I believe, in January and February. In Tobago it is reported as abundant.

The flight of this species is peculiar. Although the insect is powerful-looking, it is very lazy on the wing, and never flies for any length of time. It settles on anything, not infrequently the ground, from which it is often difficult to dislodge it from amongst long grass.

162. CYCNUS PHALEROS.

*Papilio phaleros*, Linn., Syst. Nat., i, 2, p. 796, n. 272 (1767).

Range. NICARAGUA ; VENEZUELA ; BRAZIL.

Two specimens in B. M. (*J. H. Hart, H. Caracciolo*).

ARAWACUS, n. gen.

Palpi small porrect. The third joint just visible from above. Fore-wing (in male) with a large dull black band of smoothly compressed scales lying beyond the lower corner of cell and except for a few isolated scales not lying at all within the cell. Veins 6, 7 from upper angle of cell and vein 8 from quite near the end of cell. Vein 3 from very near the lower angle of cell. Hind-wing greatly produced at anal angle and the inner margin greatly angled just before reaching the tip. At vein 2 is a slender tail given off laterally. No other tails nor rudimentary tails present. Vein 3 from close to lower angle of cell ; 5 equi-distant from 4 and 6. Upper arm of cell slightly depressed beyond middle curving out again where vein 7 arises. Female rather larger than male.

Type *Papilio linus*, Sulz.

163. ARAWACUS LINUS. (Pl. XVIII, figs. 5—5b.)

*Papilio linus*, Sulz., Gesch. Ins., t. 19, f. 10, 11 (1776).

Range. VENEZUELA ; GUIANA ; AMAZONS.

Quite common. In flight this species much resembles *P. marsyas*, but is more jerky. It nearly always settles on a low bush, but does not in my experience ever settle on the ground.

164. PANTHIADES PELION.

*Papilio pelion*, Cram., Pap. Ex., i, t. 6, E. F. (1775).

Range. BRAZIL, Amazon region.

Not rare near Port of Spain.

## 165. ATLIDES POLYBE.

*Papilio polybe*, Linn., Syst. Nat., i, 2, p. 787, n. 218  
(1767).

*Range.* BRAZIL.

A single specimen from St. Ann's Valley. Crowfoot did not record this fine species, and it is probably rare.

## 166. MITHRAS HEMON.

*Papilio hemon*, Cram., Pap. Ex., i, t. 2, D. E. (1775).

*Range.* GUIANA; BRAZIL; VENEZUELA.

A very common species in gardens, scrub, or even dense forest.

## REKOA, n. gen.

Palpi very small and short. Fore-wing long. Costa very slightly arched except at base. At apex the outer margin forms a right angle with costa but slopes away from vein 5 to tornus. Vein 3 from close to end of cell and vein 7 from close to upper angle of cell. Hind-wing much produced at vein 2 and curved gradually away to base. Vein 8 greatly arched immediately after leaving base and approximating to 7 at outer margin. Discocellular almost straight and only slightly oblique. Vein 7 from near upper angle of cell. Given off from the outer side of the wing extension at vein 2 is a long slender tail. No other tail nor rudimentary tail present.

Type *Papilio meton*, Cram.

This genus is close to *Arawacus*.

## 167. REKOA METON.

*Papilio meton*, Cram., Pap. Ex., iii, t. 201, D. E.  
(1782).

*Range.* MEXICO; GUIANA; BRAZIL.

An uncommon species. I met with a single specimen at Tabaquite in June 1898, flying at the edge of the forest in an open bushy place.

## MACUSIA, n. gen.

Palpi with the 3rd joint very small and invisible when viewed from above. Fore-wing with a smooth patch of slaty-blue sensory hairs on the basal portion of the costa and beyond is a larger patch of more raised black hairs. Vein 1b almost quite straight. The lower arm of the cell quite straight, vein 2 radiating greatly from



3; vein 5 nearer 6 than 4. Hind-wing with veins 3, 4 on a short stalk; vein 5 slightly nearer 4 than 6; vein 7 from a long way before end of cell; vein 8 very greatly arched and receding greatly from 7. Anal angle much rounded.

Type *Thecla satyroides*.

168. MACUSIA SATYROIDES.

*Thecla satyroides*, Hew., Desc. Lyc., p. 11, n. 26  
(1868).

Range. BRAZIL.

Frequent in St. Ann's Valley and probably elsewhere.

PAIWARRIA, n. gen.

Palpi slender, the second joint long with smooth appressed scales; third joint very pointed and slightly scaled pointing downwards. The median tibiæ with a pair of short spurs. Antennæ rather long and slender, the club long and almost of equal thickness throughout. Fore-wing with the costa very greatly arched, the outer margin very straight; inner margin also almost straight and forming a right angle with outer margin. Discoidal band almost circular. Hind-wing with the anal angle considerably extended and with slender tails at the extremities of nervures 2, 3 and 4, the first at nervure 2 the longest of the three and the one at nervure 4 very short; nervure 8 receding greatly immediately beyond base and approaching 7 near margin; 6 and 7 from a long way before end of cell.

Type *Papilio venulius*, Cr.

169. PAIWARRIA VENULIUS.

*Papilio venulius*, Cram., Pap. Ex., iii, t. 243, G.  
(1782).

Range. SURINAM; CAYENNE; BOLIVIA.

I found a single poor specimen in the St. Ann's Valley in June 1898 flying with *Macusia satyroides*.

170. CHALYBS ROMULUS.

*Papilio romulus*, Fab., Ent. Syst., iii, 1, p. 316, n. 195  
(1793).

*Papilio janias*, Cram., Pap. Ex., iii, t. 213, D. E.  
(1782).

Range. GUIANA; BRAZIL.

A single poor specimen in June 1898 in Cascade Valley (*W. J. Kaye*).

171. *EVENUS REGALIS*.

*Papilio regalis*, Cram., Pap. Ex., i, t. 72, E. F. (1779).

*Range*. TROPICAL SOUTH AMERICA.

This splendid insect is apparently not rare, as I have seen several specimens in various small collections. Port of Spain and Sangre Grande.

172. *EVENUS NOBILIS*.

*Thecla nobilis*, H.-S., Ex. Schmett., p. 55, f. 56 (1853) ?

*Range*. TROPICAL SOUTH AMERICA.

Scarcer than the preceding. I have a specimen from the Maraval Valley.

## Family PAPILIONIDÆ.

Subfamily *PIERINÆ*.

173. *DISMORPHIA AMPHIONE*.

*Papilio amphione*, Cram., Pap. Ex., iii, t. 232, E. F. (1782).

*Range*. GUIANA; BRAZIL.

I have included this species on the strength of Crowfoot's record, but must confess to being sceptical, as with the particular group of Dismorphias it is so easy to mistake the species, particularly in the ♀. The Brazilian ♀ *amphione* is very like Trinidad ♀ *broomeæ*. It is clear Crowfoot considered he had two species, as he gives *amphione* and another which he merely gives (?). The species with a query was probably what Butler named *broomeæ* in 1899. If *amphione* really occurs and there is no error in determination it must be exceedingly rare.

174. *DISMORPHIA BROOMEÆ*.

*Dismorphia broomeæ*, Butl., Ann. Mag. N. H., iii, p. 391 (1899).

*Range*. VENEZUELA.

The characteristic yellow colouring is present in this species particularly on the under-side, and save for the opposite coast of Venezuela (to which the species has

probably spread) the particular form probably does not occur elsewhere. The mainland form which occurs at Caracas and elsewhere, but which has evidently not received a name, is this same species over again without the special yellow insular coloration, in fact is the general mainland type of which *broomeæ* is the insular form. There is some confusion in the types of these species. Butler's ♀ type of *broomeæ* came from Venezuela; this is not the ♀ of *broomeæ* true as found in Trinidad, but is rather the ♀ of the mainland form. The ♀ of *broomeæ* has therefore never been described, so for future reference I append a description.

The species is evidently very uncertain in its appearance, as I have failed to meet with it myself in its known haunts, neither has any collector been able to secure it for me. There are 2 ♂ types in British Museum; 3 ♀♀ and 1 ♂ in the Hope Department of the Oxford Museum, and a ♀ in my own collection presented by Professor Poulton and which came from the same source as those at Oxford.

#### DISMORPHIA BROOMEÆ ♀.

Fore-wing with the ground-colour very deep brown; on the costa extending from base to three-fourths the length of cell is an orange streak which is terminated by an oblong brown blotch beyond which again is broad yellow to just beyond the cell. Within the cell a long wedge-shaped mark of the ground-colour commences as a point close to base of wing and widens out gradually to just below the blotch on costa; beyond this wedge mark and the end of cell the colouring is a mixture of orange and yellow. Discoidal mark large and conspicuous of the ground-colour and triangular. Below the discoidal mark the wedge mark is continued downwards to near tornus; inside the wedge-shaped mark is a broad deep orange streak from base to near tornus where it shades off into yellow. A narrow brown band of equal width from base running along the entire inner margin and edged for three-fourths of its length with orange. From costa embracing the discoidal mark runs a broad yellow band terminating short of outer margin and a second subapical yellow band composed of three unequal yellow blotches. Hind-wing with the central area from base to outer margin deep orange bordered with the same dark brown ground-colour as fore-wing. Inner margin and portion of outer margin light brown.

Exp. 76 mm.

## 175. EUREMA NISE.

*Papilio nise*, Cram., Pap. Ex., i, t. 20, K. L. (1775).

*Range.* COLOMBIA; VENEZUELA; GUIANA; BRAZIL.

Abundant by the roadsides. The yellow of the fore-wing fades to the normal colour of the hind-wing after a time.

## [EUREMA MARGINELLA.

*Terias marginella*, Feld., Wien. Ent. Mon., v, p. 97, n. 53 (1861).

This is merely a form (dry season ?) of *albula* with the margins to the hind-wing bordered with black.]

## 176. EUREMA ALBULA.

*Papilio albula*, Cram., Pap. Ex., i, t. 27, E. (1775).

*Range.* GUIANA; BRAZIL; VENEZUELA; CENTRAL AMERICA.

Frequently found in abundance in damp situations. In the Maracas Valley in late June 1901 I found the species particularly abundant.

## 177. EUREMA AGAVE.

*Papilio agave*, Cram., Pap. Ex., i, t. 20, H. I. (1775).

*Range.* COLOMBIA; BOLIVIA; BRAZIL, Amazons.

There is but the record of a single specimen, one taken at Verdant Vale (*S. Kaye*) in 1896, probably about December. The species is however likely to be overlooked.

## 178. EUREMA LUCINA.

*Terias lucina*, Poey, Mem. Cuba., t. 18, f. 8-10 (1851).

*Range.* CUBA; HONDURAS.

## 179. EUREMA ELATHEA.

*Papilio elathea*, Cram., Pap. Ex., ii, t. 99, C. D. (1779).

*Range.* CUBA; JAMAICA; PANAMA.

As these two species are described, unquestionably both occur in Trinidad, but are they distinct species? Both

occur together in Cuba also, which suggests that the two may be one. The marginal band to the hind-wing in *elatheia* appears to be fairly constant, and the black borders of the ♀ are apparently always more heavy. The dry season form of *elatheia* may be the same as the dry season form of *lucina*.

180. EUREMA PALMYRA.

*Terias palmyra*, Poey, Mem. Cuba, t. 24, f. 4-6 (1851).

*Range.* VENEZUELA ; COLOMBIA ; CUBA.

181. EUREMA LEUCE.

*Terias leuce*, Boisd., Sp. Gén., i, p. 659, n. 10 (1836).

*Range.* BRAZIL ; BOLIVIA ; PARAGUAY ; W. INDIES.

182. SPHÆNOGONA GRATIOSA.

*Terias gratiosa*, Doubl. and Hew., Gen. D. L., t. 9, f. 5 (1847).

*Range.* VENEZUELA ; COLOMBIA ; PANAMA.

Never abundant, but pretty general. The flight of a *Sphænogona* is much more rapid than a *Eurema*, and many specimens escape capture.

183. GLUTOPHRISSA DRUSILLA.

*Papilio drusilla*, Cram., Pap. Ex., ii, t. 207, C. (1779).

*Range.* GUIANA ; BRAZIL, Rio Janeiro.

Evidently local. Half-a-dozen specimens were received in a single consignment, but none had been taken before, nor have any further specimens come to hand.

184. GLUTOPHRISSA ILAIRE.

*Pieris ilaire*, Godt., Enc. Méth, ix, p. 142, n. 83 (1819).

*Range.* CENTRAL AMERICA.

Not common.

185. DAPTONOURA POLYHYMNIA.

*Pieris polyhymnia*, Feld., Reise Nov. Lep., ii, p. 170, n. 152 (1865).

*Range.* VENEZUELA ; COLOMBIA.

Not common.

Butler's species *harti* has no logical standing and must be sunk under *polyhymnia*. His types ♂ and ♀ are described from Trinidad specimens, but it is impossible to differentiate the ♀ from ♀ *polyhymnia*, and the ♂ agrees with Felder's description, but there is no ♂ specimen in the British Museum for comparison. It is highly probable that some of Butler's characters are characters brought about by the age of the specimens with which he was comparing the Trinidad fresh examples.

#### 186. KRICOGONIA LYSIDE.

*Colias lyside*, Godt., Enc. Méth., ix, p. 98, n. 30 (1819).

*Rhodocera terissa*, Luc., Rev. Zool., 1852, p. 429.

*Range.* JAMAICA; CUBA; HAYTI; CENTRAL AMERICA.

The occurrence of this species in Trinidad is remarkable and suggests accidental introduction or migration. The single specimen, a ♀, came to me in a batch of papered insects, and there is no doubt about the insect having occurred.

A note concerning this species may here be not out of place. The ♂ sex was described by Lucas and the ♀ sex was described independently by Godart. My correspondent, Mr. C. B. Taylor, in Kingston, Jamaica, has often bred this species, and has proved frequently that *terissa* is only the ♂ of *lyside*.

#### ITABALLIA, n. gen.

Fore-wing very strongly arched from base to costa; the tip almost rounded. Outer margin evenly curved to tornus which is blunt. Inner margin slightly upcurved near middle. Discoidal cell scarcely longer than half the length of wing. Hind-wing with costa well curved, the apex quite rounded; outer margin boldly curved. Discoidal cell not more than half the length of wing, the discocellular very slightly oblique with nervure 4. Head large. Palpi very slender porrect, the 2nd joint only slightly clothed with hair. Legs very slender. Antennæ with a long gradually thickened tip.

Type *Pieris pandosia*, Hew.

#### 187. ITABALLIA PANDOSIA.

*Pieris pandosia*, Hew., Ex. Butt., i, t. 2, f. 14 (1853).

*Range.* VENEZUELA.

The record rests on the capture of a single specimen made by myself some time in May or June 1898.

188. *PIERIS MONUSTE.*

*Papilio monuste*, Linn., Mus. Utr., p. 237 (1764).

*Range.* GUIANA.

Very common and generally distributed.

189. *CALLIDRYAS PHILEA.*

*Papilio philea*, Linn., Syst. Nat., i, 2, p. 764, n. 104 (1767).

*Range.* BRAZIL; GUIANA; NICARAGUA; COLOMBIA.

Not abundant. Always found near streams.

190. *CALLIDRYAS SENNÖE.*

*Papilio sennöe*, Linn., Syst. Nat., i, 2, p. 764, n. 103 (1767).

*Papilio eubule*, Linn., Syst. Nat., i, 2, p. 764, n. 102 (1767).

*Range.* SOUTHERN STATES to ARGENTINA with WEST INDIES.

191. *PHÆBIS ARGANTE.*

*Papilio argante*, Fabr., Syst. Ent., p. 470, n. 116 (1775).

*Range.* NICARAGUA; GUIANA, Roraima; BRAZIL, Rio.

Not at all common apparently.

*PHÆBIS HERSILIA.*

*Papilio hersilia*, Cram., Pap. Ex., ii, t. 173, C. D. (1779).

*Phæbis cipris*, Cram., Pap. Ex., ii, t. 99, E. F. (1779).

*Range.* BRAZIL.

(?) Error of determination. The name appears in Crowfoot's list.

192. *APHRISSA STATIRA.*

*Papilio statira*, Cram., Pap. Ex., ii, t. 120, C. D. (1779).

*Range.* GUIANA; BRAZIL; PERU; ECUADOR; COLOMBIA; PANAMA; ST. LUCIA.

Locally very common, but not general.

## Family PAPILIONIDÆ.

## 193. PAPILIO POLYDAMAS.

*Papilio polydamas*, Linn., Mus. Ulr., p. 192 (1764).

*Range.* MEXICO to ARGENTINA.

Not very common. Flies in the sunshine. The true *polydamas* occurs and not the general West Indian form *polyerates*.

## 194. PAPILIO ZEUXIS.

*Papilio zeuxis*, Luc., Rev. Zool., 1852, p. 190.

*Range.* VENEZUELA.

Larva on orange.

The many closely allied species of this group have rendered the identification of this species extremely difficult. Mr. F. W. Urich has bred me a series from a batch of eggs showing considerable variation in the green patch of the fore-wing of the male. Some of these would be called *alyattes*, Feld., which has a greater lustre on the hind-wing and which has a smaller green patch on fore-wing. *Alyattes* ♀♀ are however very different from *zeuxis* ♀♀. There can scarcely be a doubt that, as set forth by Kirby in his Catalogue of Diurnal Lepidoptera (pp. 525, 526), many of these species are only varieties or local forms of *vertumnus*, Cramer, while some of these in themselves vary considerably.

## 195. PAPILIO CYMOCLES.

*Papilio cymocles*, Doubl., Ann. Mag. N. H., xiv, p. 416 (1844).

*Range.* Unknown. The species was described from Trinidad.

This is probably only a form of *zeuxis*, but *cymocles* having priority *zeuxis* would have to be sunk.

## 196. PAPILIO GARGASUS.

*Papilio gargasus*, Hübn., Verz. bek. Schmett., p 87, n. 909 (1816).

*Range.* BRAZIL, Amazons.

Very abundant in many parts of the Island, particularly frequenting bamboo clumps.



## 197. PAPILIO POMPEIUS.

*Papilio pompeius*, Fab., Mant. Ins., ii, p. 5, n. 37 (1787).

Range. TROPICAL AMERICA.

Var. *anchisiades*, Esp.

Mr. F. W. Urich has bred from the same batch of eggs *anchisiades*, Esp., and *theramenes*, Feld. I have retained Fabricius' name *pompeius* for this species, as the different forms are not even constant to locality.

The species is fairly abundant in similar situations as the last.

## 198. PAPILIO ANDROGEOS.

*Papilio androgeos*, Cr., Pap. Ex., i, t. 16, C. D. (1775) ♀.

*Papilio polycaon*, Cr., Pap. Ex., iii, t. 203, A. B. (1782) ♂.

Range. BRAZIL; WEST INDIES.

Not common. The ♀ (*androgeos*) is almost in the same proportions as the ♂ and not specially rare, as is found to be so often the case elsewhere.

## 199. PAPILIO THOAS.

*Papilio thoas*, Linn., Mant. Plant., p. 536 (1771).

Range. SOUTHERN STATES; MEXICO to SOUTH BRAZIL.

Apparently not common.

## Family HESPERIIDÆ.

## Subfamily PYRRHOPYGINÆ.

## 200. PYRRHOPYGE CHARYBDIS, Doubl. and Hew., Gen. D. L., t. 78, f. 2 (1852).

Range. COLOMBIA; VENEZUELA; BRAZIL.

The commonest species of the genus. Of frequent occurrence round Port of Spain.

## 201. PYRRHOPYGE PHIDIAS.

*Papilio phidias*, Linn., Mus. Ulr., p. 334 (1764).

Range. BRAZIL; BOLIVIA; COLOMBIA.

The species is given in Crowfoot's list. I have not been able to trace a specimen.

Subfamily *HESPERIINÆ*.202. *ACOLASTUS AMYNTAS*.

*Papilio amyntas*, Fab., Syst. Ent., p. 533, n. 304 (1775).

*Range.* WEST INDIES; VENEZUELA; BRAZIL.

Apparently not so common in Trinidad as in some of the other West Indian Islands.

203. *EUDAMUS PROTEUS*.

*Papilio proteus*, Linn., Mus. Ulr., p. 333 (1764).

*Range.* TROPICAL AMERICA.

An abundant species.

204. *EUDAMUS DORANTES*.

*Papilio dorantes*, Stoll, Suppl. Cram. Pap. Ex., t. 39, f. 9 (1790).

*Range.* BRAZIL; VENEZUELA; HONDURAS; W. INDIES.

205. *EUDAMUS CATILLUS*.

*Papilio catillus*, Cram., Pap. Ex., iii, t. 260, F. G. (1782).

*Range.* VENEZUELA; COLOMBIA; BRAZIL.

Very common.

206. *EUDAMUS SIMPLICIUS*.

*Papilio simplicius*, Stoll, Suppl. Cram. Pap. Ex., t. 39, f. 6, O. E. (1790).

*Range.* CENTRAL AMERICA; BRAZIL; VENEZUELA.

Very common.

207. *EUDAMUS EURYCLES*.

*Hesperia eurycles*, Latr., Enc. Méth., ix, p. 730, n. 5 (1823).

*Range.* VENEZUELA; BRAZIL; MEXICO; HONDURAS.

208. *EUDAMUS PROTILLUS*.

*Eudamus protillus*, Herr.-Sch., Prod. Syst. Lep., p. 63, n. 19 (1869).

*Range.* BRAZIL.

Recorded by Crowfoot.

209. EUDAMUS BRACHIUS.

*Goniurus brachius*, Hübn., Zutr. Ex. Schmett., f. 609, 610 (1832).

*Eudamus doryssus*, Swains., Zool. Ill., Ins. ii, t. 48, f. 2 (1833).

*Range.* BRAZIL; NICARAGUA; ECUADOR.

Not common. Occurs generally singly.

210. EUDAMUS AMISUS.

*Eudamus amisus*, Hew., Desc. Hesp., p. 5, n. 5 (1867).

*Range.* HAITI.

Recorded by Crowfoot. Correct determination (?).

211. EUDAMUS UNDULATUS.

*Eudamus undulatus*, Hew., Desc. Hesp., p. 4, n. 4 (1867).

*Range.* TROPICAL SOUTH AMERICA.

Recorded by Crowfoot.

212. GONIURUS CÆLUS.

*Papilio cælus*, Cram., Pap. Ex., iv, t. 343, C. D. (1782).

*Range.* BRAZIL; VENEZUELA.

Two specimens in the National Collection taken by W. E. Broadway. A single specimen from St. Ann's Valley (*W. J. Kaye*).

213. DYSENIUS SPURIUS.

*Dysenius spurius*, Mabille, Bull. Soc. Ent. Fr. (5), x, p. 46 (1880).

*Range.* BRAZIL.

Two specimens in the National Collection (*W. E. Broadway*), one from St. Ann's Valley (*W. J. Kaye*).

214. SPATHILEPIA CLONIUS.

*Papilio clonius*, Cram., Pap. Ex., i, t. 80, C. D. (1779).

*Range.* VENEZUELA; NICARAGUA; BRAZIL.

Common. Difficult to procure in good condition.

215. EPARGYREUS EXADEUS.

*Papilio exadeus*, Cram., Pap. Ex., iii, t. 260, C. (1782).

*Range.* BRAZIL; GUATEMALA; VENEZUELA; COLOMBIA.

A common species.

216. PROTEIDES EVADNES.

*Papilio evadnes*, Cram., Pap. Ex., iv, t. 343, G. H. (1782).

*Range.* TROPICAL AMERICA.

Recorded by Crowfoot.

217. PROTEIDES ÆGITA.

*Hesperia ægita*, Hew., Trans. Ent. Soc., Ser. iii, vol. ii, p. 486, n. i (1866).

*Range.* BRAZIL, Para.

Recorded by Crowfoot.

218. TELEGONUS APASTUS.

*Papilio apastus*, Cram., Pap. Ex., ii, t. iii, D. E. (1779).

*Range.* BRAZIL; PANAMA; BRITISH GUIANA.

Recorded by Crowfoot.

219. TELEGONUS GRENADENSIS.

*Telegonus grenadensis*, Schaus, Pr. U. S. N. Mus., xxiv, p. 427 (1902).

*Range.* GRENADA.

A single specimen.

220. TELEGONUS ANAPHUS.

*Papilio anaphus*, Cram., Pap. Ex., ii, t. 178, F. (1779).

*Range.* BRAZIL; VENEZUELA; COLOMBIA; MEXICO.

Recorded by Crowfoot.

221. TELEGONUS ALARDUS.

*Papilio alardus*, Stoll, Supp. Cram. Pap. Ex., t. 39, p. 77, F. (1790).

*Range.* VENEZUELA; COLOMBIA; BRAZIL.

Recorded by Crowfoot.

222. THYMELE FULGATOR.

*Papilio fulgurator*, Walch, Naturf., vii, p. 115, t. 1, f. 2, a, b (1775).

*Range.* BRAZIL; VENEZUELA; HONDURAS.

One specimen in National Collection and another in my own collection. Apparently uncommon.

223. NASCUS PHOCUS.

*Papilio phocus*, Cram., Pap. Ex., ii, t. 162, F. (1779).

*Range.* BRAZIL; PARAGUAY; HONDURAS.

I met with a single specimen in the Maraval Valley in July 1898.

224. BUNGALOTIS MIDAS.

*Papilio midas*, Cram., Pap. Ex., i, t. 63, G. (1779).

*Range.* VENEZUELA; BRAZIL; HONDURAS.

225. CECROPTERUS ZAREX.

*Cecrops zarex*, Hübn., Zutr. Ex. Schmett., pp. 183, 184 (1818).

*Range.* BRAZIL; VENEZUELA.

226. CECROPTERUS NEIS.

*Cecrops neis*, Hübn., Zutr. Ex. Schmett., pp. 619, 620 (1832).

*Range.* BRAZIL; VENEZUELA.

227. CECROPTERUS ITYLUS.

*Autochthon itylus*, Hübn., Zutr. Ex. Schmett., pp. 249, 250 (1823).

*Range.* GUIANA.

Recorded by Crowfoot.

228. CECROPTERUS BIPUNCTATUS.

*Papilio bipunctatus*, Gmel., Syst. Nat., i, 5, p. 2360, n. 900 (1781—1791).

*Range.* TROPICAL SOUTH AMERICA.

Recorded by Crowfoot.

229. *CÆCINA CALANUS.*

*Cæcina calanus*, Godm. and Salv., Biol. Centr. Am.,  
Rhop., ii, p. 343, t. 81, f. 10.

*Range.* MEXICO to PANAMA.

A single specimen received from Mr. F. W. Ulrich.

230. *THORYBES BATHYLLUS.*

*Papilio bathyllus*, Smith, Abb. Lep. Ins. Georg., i,  
t. 22 (1797).

*Range.* CENTRAL and SOUTH AMERICA.

Recorded by Crowfoot.

231. *PHANUS VITREUS.*

*Papilio vitreus*, Cram., Pap. Ex., iv, t. 365, D. (1782)

*Range.* HONDURAS; BRAZIL; GUIANA; PANAMA.

A fairly common species and variable.

232. *PHANUS EBUSUS.*

*Papilio ebusus*, Cram., Pap. Ex., iv, t. 300, C. D.  
(1782).

*Range.* SURINAM.

Recorded by Crowfoot.

233. *COGIA CALCHAS.*

*Eudamus calchas*, H.-S., Prodr. Syst. Lep., iii, p. 68,  
n. 19 (1869).

*Range.* BRAZIL; HONDURAS.

Recorded by Crowfoot.

234. *XENOPHANES TRYXUS.*

*Papilio tryxus*, Cram., Pap. Ex., iv, t. 334, G. H.  
(1782).

*Range.* VENEZUELA; BRAZIL; ECUADOR; COLOMBIA.

A fairly common insect.

235. *PYTHONIDES LUGUBRIS.*

*Leucochitonea lugubris*, Feld., Verh. Zool. Bot. Ges.  
Wien., 1869, p. 476, n. 32.

*Range.* VENEZUELA; NICARAGUA.

A single specimen taken in June 1898 in the Botanical  
Gardens (*W. J. Kaye*).

236. PYTHONIDES CERIALIS.

*Papilio cerialis*, Cram., Pap. Ex., iv, t. 392, N. O. (1782).

*Range.* VENEZUELA; BRAZIL; NICARAGUA.

Very common on dry grassy banks.

237. ACHLYODES TERRENS.

*Achlyodes terreus*, W. Schaus, Pr. U. S. Nat. Mus., xxiv, p. 433 (1902).

*Range.* VENEZUELA; BRAZIL.

Is probably mistaken for the previous species on the wing.

238. SOSTRATA SCINTILLANS.

*Leucochitona scintillans*, Mabille, Bull. Soc. Ent. Fr. (5), vi, p. 200, n. 40 (1877).

*Range.* NICARAGUA; GUIANA.

From the range of this species it may possibly be indigenous as recorded by Crowfoot, but as the previous species is so alike on the upper-side some confusion may have arisen.

239. SOSTRATA LEUCORRHOA.

*Sostrata leucorrhoea*, Godm. and Salv., Biol. Centr. Am., ii, p. 397.

*Range.* PANAMA; COLOMBIA; TABOGA I.; VENEZUELA.

Presumably the species from Trinidad is *leucorrhoea*, but the white anal patch on the under-side of the hind-wings is more yellowish than white.

240. ANTIGONUS NEARCHUS.

*Hesperia nearchus*, Latr., Humb. Bonp. Obs. Zool., ii, p. 135, t. 43, f. 3, 4 (1811—1823).

*Range.* HONDURAS; VENEZUELA; PANAMA.

Common in St. Ann's Valley (*W. J. Kaye*); Port of Spain (*W. E. Broadway*).

241. ANTIGONUS EROSUS.

*Urbanus vetus erosus*, Hübn., Samm. Ex. Schmett. (1806—1816).

*Range.* BRAZIL; NICARAGUA; VENEZUELA.

Frequently met with at St. Ann's Valley, Maraval and Verdant Vale in June 1901 (*W. J. Kaye*).

242. EUDAMIDAS OZEMA.

*Achlyodes ozema*, Butl., Trans. Ent. Soc., 1870, p. 515.

*Range.* MEXICO to BRAZIL.

A single specimen taken by W. E. Broadway presumably in the neighbourhood of Port of Spain. A second specimen has recently been taken at Tunapuna.

243. MYLON PULCHERIUS.

*Leucochitonea pulcherius*, Feld., Verh. Zool. Bot. Ges. Wien., 1869, p. 477, n. 35.

*Range.* MEXICO; GUATEMALA; PANAMA; VENEZUELA.

Recorded by Crowfoot.

244. CAMPTOPLEURA THRASYBULUS.

*Papilio thrasybulus*, Fab., Ent. Syst., iii. 1, p. 346, n. 315.

*Range.* BRAZIL; NICARAGUA; VENEZUELA; B. GUIANA, Roraima.

245. DIPHORIDAS PHALÆNOIDES.

*Urbanus vetus phalænoïdes*, Hübn., Samm. Ex. Schmett. (1806—1816).

*Range.* MEXICO to BRAZIL.

Not rare in the Botanical Gardens.

246. GORGYTHION PYRALINA.

*Helias pyralina*, Moesch., Verh. Zool. Bot. Ges. Wien., xxvi, p. 343, t. 4, f. 31 (1876).

*Range.* HONDURAS; VENEZUELA; B. GUIANA.

Probably as common as on the mainland if carefully searched for.

247. HESPERIA SYRICHTUS.

*Papilio syrictus*, Fab., Syst. Ent., p. 534, n. 394 (1775).

*Range.* WEST INDIES; CENTRAL AMERICA; VENEZUELA; BRAZIL.

The commonest 'skipper.'



248. HESPERIA RURALIS.

*Syrichtus ruralis*, Boisd., Ann. Soc. Ent. Fr., 1852,  
p. 311.

Range. CALIFORNIA.

Crowfoot has given this species, but from its range it looks as if some mistake had arisen in the identification.

249. HELIOPETES ARSALTE.

*Papilio arsalte*, Linn., Mus. Ulr., p. 245 (1764).

Range. AMAZONS; VENEZUELA; HONDURAS.

Frequent, but not abundant.

250. STAPHYLUS ASCALAPHUS.

*Helias ascalaphus*, Stgr., Verh. Zool. Bot. Ges. Wien.,  
xxv, p. 116, n. 31 (1876).

Range. VENEZUELA; NICARAGUA; PANAMA.

June 1898 (*W. J. Kaye*).

251. STAPHYLUS SINEPUNCTIS, n. sp.

Fore-wing without any apical spots, brown with the markings black-brown. Across the centre of the wing is a broad V-shaped mark the basal half of which is the broadest and the marginal half is duplicated for half its length from costa, the double bands uniting at near vein 3; beyond the V is a sinuated dark line on a paler ground-colour reaching down to about vein 4 and then merging into the outward half of the V-mark. Tornus with a large round patch of a somewhat dull golden colour but very inconspicuous. Hind-wing with a broad dark central fascia much curved and followed by a lighter edging. Under-side of fore-wing almost uncolorous shining very dark brown slightly lighter at tornus. Under-side of hind-wing with a large dull fawn-coloured patch at anal angle extending over about half the wing area.

Exp. 28 mm.

Taken at end of June 1901 at St. Ann's Valley (*W. J. Kaye*).

252. STAPHYLUS AUROCAPILLA.

*Staphylus aurocapilla*, Staud., Verh. Zool. Bot. Ges. Wien., xxv.

Range. MEXICO to BUENOS AYRES.

Probably taken in the Botanical Gardens (*Lady Broome*).

## 253. ANASTRUS SIMPLICIOR.

*Pellicia simplicior*, Mösch., Verh. Zool. Bot. Ges. Wien.,  
xxvi, p. 342, t. 4, f. 27 (1876).

*Range.* JAMAICA; ST. DOMINGO; SURINAM.

One specimen in June 1898 (*W. J. Kaye*).

Subfamily PAMPHILINÆ.

## 254. VEHLIUS STICTOMENES.

*Staphylus stictomencis*, Butl., Trans. Ent. Soc., 1877,  
p. 153.

*Range.* VENEZUELA; BRAZIL, Amazons.

One specimen in June 1898 (*W. J. Kaye*). Doubtless  
a common species.

## 255. VEHLIUS SUBPLANUS, n. sp.

Fore-wing very dark brown with a dull yellowish spot between  
veins 3 and 4 midway between end of cell and outer margin and a  
similar spot lying rather nearer to the cell between veins 2, 3.  
Hind-wing as fore-wing but without markings. The costa almost  
black. On the under-side of fore-wing the two yellow spots show  
out conspicuously and towards the margin the veins are slightly  
indicated. Under-side of hind-wing paler than fore-wing with  
scarcely a trace of pale scaling on the veins.

Exp. 26 mm.

In June 1898 (*W. J. Kaye*).

## 256. COBALUS VIRBIUS.

*Papilio virbius*, Cram., Pap. Ex., ii, t. 143, G. (1779).

*Range.* BRAZIL.

## 257. COBALUS CANNÆ.

*Cobalus cannæ*, Herr.-Sch., Prodr. Syst. Lep., iii, p. 83  
(1869).

*Range.* MEXICO to ARGENTINA.

One specimen in July 1898.

The specimen may be a distinct species, as it has three  
subapical hyaline spots, but as Godman in the "Biologia  
Cent. Amer." says that *cannæ* is very variable, it is quite  
likely that this is only a form of that species.

258. COBALOPSIS EDDA.

*Cobalopsis edda*, Mab., Compt. Rend. Soc. Ent. Belg.,  
xxxv, p. clxx (1891).

*Range.* MEXICO to GUIANA.

A single specimen only in June 1898 (*W. J. Kaye*).

259. PHANIS JUSTINIANUS.

*Hesperia justinianus*, Latr., Enc. Méth., ix, p. 760.  
*Thracides aletes*, Hüb., Zutr. Ex. Schmett., ff. 731, 732  
(1832).

*Range.* BRAZIL; HONDURAS; MEXICO; NICARAGUA.

A single specimen in July 1898 (*W. J. Kaye*).

260. PHANIS ALMODA.

*Hesperia almoda*, Hew., Trans. Ent. Soc., Ser. iii, vol.  
ii, p. 499, n. 36 (1866).

*Range.* AMAZONS.

A single specimen taken with the previous species  
(*W. J. Kaye*). These two species may prove to be one  
variable one. More material is necessary or life histories  
are wanted to decide.

261. ARTINES ATIZIES.

*Artines atizies*, Godm., Biol. Centr. Am., Rhop., ii, p.  
608, t. 103, ff. 49, 50.

*Range.* PANAMA; VENEZUELA; GUIANA; BRAZIL.

Two specimens in St. Ann's Valley in July 1898 (*W. J.  
Kaye*). The species is very conspicuous on the wing and  
flies in damp, dark places.

262. MOERIS STRIGA.

*Tabides striga*, Geyer in Hübn., Zutr. Ex. Schmett., iv,  
p. 32, ff. 739, 740.

*Range.* MEXICO to ARGENTINA.

Two ♂♂ and 1 ♀ in June 1901 (*W. J. Kaye*). Easily  
recognized by the well-marked under-side.

## 263. METRON CHRYSOGASTRA.

*Pamphila chrysogastra*, Butl., Trans. Ent. Soc., p. 506 (1870).

*Range.* MEXICO to BRAZIL; AMAZONS.

A single specimen near the Botanical Gardens in June 1901 (*W. J. Kaye*).

## 264. THARGELLA FULIGINOSA.

*Thargella fuliginosa*, Godm., Biol. Centr. Am., Rhop., ii, p. 564, t. 100, figs. 24, 25 ♂.

*Range.* NICARAGUA; COLOMBIA; BRITISH GUIANA; AMAZONS.

Two specimens in June 1898 (*W. J. Kaye*).

## 265. MEGISTIAS TELATA.

*Cobalus telata*, H.-S., Prodr. Syst. Lep., iii, p. 81 (1869), T. C. 1, ff. 13, 14, 15.

*Range.* MEXICO; VENEZUELA; GUIANA.

Two specimens from the Maraval Valley (*C. W. Ella-combe*).

## 266. MEGISTIAS EPIBERUS.

*Pamphila epiberus*, Mab., Le Nat., 1889, p. 134, f. 2.

*Range.* MEXICO to BRAZIL.

Given by Godman and Salvin as a Trinidad species.

## 267. VORATES DECORA.

*Cobalus decora*, H.-S., Prodr. Syst. Lep., iii, p. 81 (1869).

*Range.* MEXICO; COLOMBIA.

A single specimen taken in May 1898 at Tabaquite (*W. J. Kaye*).

## 268. METHIONOPSIS MODESTUS.

*Methionopsis modestus*, Godm., Biol. Centr. Am., Rhop., ii, p. 599, t. 103, ff. 14, 15, 16.

*Range.* MEXICO to BRAZIL; TABOGA I.

A common species on the mainland, and probably so in Trinidad.

269. HYLEPHILA PHYLÆUS.

*Papilio phylæus*, Drury, Ill. Ex. Ent., i, t. 13, f. 4, 5  
(1773).

*Range.* SOUTHERN UNITED STATES to BRAZIL; WEST INDIES.

Abundant.

270. THYMELICUS VIBEX.

*Thymelicus vibex*, Hübn., Zutr. Ex. Schmett., ff. 685, 686  
(1832).

*Range.* SOUTHERN UNITED STATES to PARAGUAY; WEST INDIES.

I have taken more specimens of this than the last, and probably both are equally common.

271. THYMELICUS ATHENION.

*Talides athenion*, Hübn., Samm. Ex. Schmett. (1816–1841).

*Range.* MEXICO to BRAZIL.

A single specimen in June 1898 (*W. J. Kaye*).

272. PADRAONA EPICTETUS.

*Papilio epictetus*, Fab., Ent. Syst., iii, 1, p. 330, n. 252  
(1793).

*Range.* TROPICAL AMERICA.

Recorded by Crowfoot.

273. CALPODES ETHLIUS.

*Papilio ethlius*, Cram., Pap. Ex., iv, t. 392, A. B.  
(1782).

*Range.* SOUTHERN UNITED STATES to ARGENTINA; WEST INDIES.

A common species. Very fond of flying about Canna blooms.

274. VACERRA LITANA.

*Hesperia litana*, Hew., Trans. Ent. Soc. (3), ii, p. 494  
(1866).

*Range.* MEXICO to BRAZIL.

A single specimen in July 1901 (*W. J. Kaye*).

## 275. NICONIADES XANTHAPHES.

*Niconiades xanthaphes*, Hübn., Samm. Ex. Schmett.  
(1816—1841).

*Range.* MEXICO to BRAZIL.

A single specimen in June 1898 (*W. J. Kaye*).

## 276. NICONIADES GESTA.

*Thanaos gesta*, Herr.-Sch., Corresp. Blatt. Regens.,  
xvii, p. 142 (1863).

*Range.* CUBA.

Recorded by Crowfoot.

## 277. NICONIADES CÆSO.

*Niconiades cæso*, Mabilie, Compte Rend. Soc. Ent.  
Belg., xxxv, p. lxxxviii.

*Range.* MEXICO to BRAZIL.

## 278. ZENIS MINOS.

*Hesperia minos*, Latr., Enc. Méth., ix, p. 756, n. 76  
(1823).

*Range.* MEXICO to BRAZIL.

Recorded by Crowfoot.

## 279. CARYSTUS ARTONA.

*Hesperia artona*, Hew., Desc. Hesp., p. 27 (1868).

*Range.* NICARAGUA; GUIANA; BRAZIL, Amazons, Rio.

A single specimen from Tunapuna (*Guppy*).

## 280. VETTIUS PHYLLUS.

*Papilio phyllus*, Cram., Pap. Ex., ii, t. 176, B. C.  
(1779).

*Range.* PANAMA to BRAZIL.

Fairly frequent.

## 281. TALIDES SERGESTUS.

*Papilio sergestus*, Cram., Pap. Ex., i, t. 74, C. (1779).

*Range.* MEXICO to BRAZIL.

A single specimen from Tunapuna (*Guppy*).

282. CARYSTOIDES BASOCHESII.

*Hesperia basochesii*, Latr., Enc. Méth., ix, p. 747.

Range. HONDURAS to BRAZIL.

A single specimen in the St. Ann's Valley in early July 1901 (*W. J. Kaye*).

283. ORSES CYNISCA.

*Hesperia cynisca*, Swains., Zool. Ill., iii, 1, t. 40 (1820, 1821).

Range. MEXICO to BRAZIL.

A single specimen secured by F. W. Urich.

284. PERICHARES CORYDON.

*Papilio corydon*, Fab., Syst. Ent., p. 533, n. 385 (1775).

Descriptions of Ovum, Larva and Pupa by E. S. Panton, Journ. Inst. Jamaica, ii, pp. 438, 439 (1897).

Range. TROPICAL AMERICA with WEST INDIES.

I have never seen this species in anything approaching the numbers as found in Jamaica. As the larva feeds on sugar-cane, it is probable that in the vicinity of the sugar estates it would be found plentifully.

285. PERICHARES HERONI, n. sp.

Fore-wing rich deep chocolate-brown; the apex narrowly white. Beyond the end of cell a small yellow dot. Within the cell lying close but quite free from the discocellulars is a yellow spot contracted in the centre and divided by a fine brown line along the fold. Immediately below this mark is a wedge-shaped yellow spot lying between nervures 3, 4 and a still larger wedge-shaped yellow spot lies between nervures 2, 3 with its upper edge touching the discoidal cell. Under-side of fore-wing with the costa and apical half of wing purplish, the remainder black with the yellow stigmata showing through. Hind-wing purplish suffused with brownish. Two small yellow dots between nervures 3, 4 and 4, 5 respectively. Under-side of abdomen yellow.

Exp. 48 mm.

Taken by Lady Broome.

286. PERICHARES LOTUS.

*Telegonus lotus*, Butl., Trans. Ent. Soc., 1870, p. 495.

*Range.* MEXICO to ECUADOR and VENEZUELA.

A ♂ and a ♀. The species is no doubt mistaken for *Perichares corydon* in the male sex. The ♀ is entirely different and is well figured in Biol. Centr. Am.

287. THRACIDES PHIDON.

*Papilio phidon*, Cram., Pap. Ex., iii, t. 245, F. G. (1782).

*Range.* PANAMA to AMAZON REGION.

288. THRACIDES ANTONINUS.

*Hesperia antoninus*, Latr., Enc. Méth., ix, p. 746, n. 47 (1823).

*Range.* TROPICAL SOUTH AMERICA.

Recorded by Crowfoot.

289. THRACIDES LONGIROSTRIS.

*Papilio longirostris*, Sepp, Surin. Vlind., i, t. 27 (1848).

*Range.* MEXICO to BRAZIL.

A single specimen from Tunapuna.

INDEX OF GENERA AND SPECIES.

- |                 |                  |                  |                  |
|-----------------|------------------|------------------|------------------|
| abaris, 189     | amyntas, 208     | arsalte, 215     | cachrus, 188     |
| Achlyodes, 213  | Anaea, 178       | artemisía, 172   | Cæcina, 212      |
| Acolastus, 208  | anaphus, 210     | Artines, 217     | caeso, 220       |
| Actinote, 167   | Anartia, 171     | artona, 220      | calanus, 212     |
| actoris, 183    | Anastrus, 216    | ascalaphus, 215  | calchas, 212     |
| Adelpha, 176    | androgeos, 207   | atergatis, 162   | Caligo, 165      |
| ægita, 210      | andromeda, 182   | athenion, 219    | Callicista, 194  |
| Æria, 164       | andromica, 165   | atizies, 217     | Callicopis, 194  |
| agacles, 172    | anterice, 183    | Atlides, 198     | Callicore, 173   |
| Aganisthos, 177 | anteas, 167      | aurelia, 172     | Callidryas, 205  |
| Agave, 202      | Anteros, 186     | aurimnia, 186    | Callipsyche, 191 |
| Ageronia, 174   | Antigonus, 213   | aurocapilla, 215 | Calpodes, 219    |
| agna, 164       | antimache, 177   | avius, 185       | calus, 194       |
| agyrtus, 190    | antiochus, 168   | azan, 188        | calyce, 188      |
| alalia, 167     | antoninus, 222   |                  | Camptopleura,    |
| alardus, 210    | apastus, 210     | basochesii, 221  | 214              |
| albata, 192     | Aphrissa, 205    | bathyllus, 212   | cana, 175        |
| albula, 202     | Arawacus, 197    | beon, 192        | cannæ, 216       |
| aletes, 217     | archippus, 161   | biblis, 175      | Carystoides, 221 |
| aliphera, 169   | arethusa, 175    | bipunctatus, 211 | Carystus, 220    |
| almoda, 217     | argante, 205     | Bithys, 195      | cassia, 165      |
| amalthea, 171   | argiva, 191      | brachius, 209    | cassius, 190     |
| amisus, 209     | argyrodines, 185 | brixiola, 181    | Catagramma, 173  |
| amphinome, 174  | aristus, 187     | broomeae, 201    | catillus, 208    |
| amphione, 200   | arnœa, 181       | Bungalotis, 211  | Catonephile, 171 |



- Cecropterus, 211  
 celmis, 180  
 celmus, 192  
 cephus, 180  
 Ceratinia, 164  
 ceres, 162  
 cerialis, 213  
 Chalybs, 199  
 Charis, 185  
 charybdis, 207  
 Chilades, 190  
 chiron, 175  
 Chlosyne, 170  
 chorinaeus, 184  
 chrysogastra, 218  
 cippus, 183  
 cipris, 205  
 claudina, 170  
 cleopatra, 181  
 clonius, 209  
 Cobalopsis, 217  
 Cobalus, 216  
 coccineata, 185  
 codomannus, 173  
 coelus, 209  
 Cogia, 212  
 Colanis, 169  
 corydon, 221  
 Cremna, 183  
 Cricosoma, 184  
 erolus, 192  
 Cyenus, 197  
 cymocles, 206  
 cynica, 221  
 Cystineura, 175  
 cytherea, 176
- Danaïs, 162  
 Daptonoura, 203  
 darius, 166  
 decora, 218  
 demodice, 177  
 demonassa, 195  
 demophon, 177  
 Didonis, 175  
 dindymus, 195  
 Dione, 170  
 Diorrhina, 184  
 Diphoridas, 214  
 dirce, 174  
 Dismorphia, 200  
 dorantes, 208  
 doris, 180  
 doryssus, 209  
 dracontis, 179  
 drusilla, 203  
 dumenilii, 191  
 Dynamine, 172  
 Dynastor, 166
- Dysenius, 208  
 ebusus, 212  
 echion, 191  
 echo, 181  
 edda, 217  
 egea, 172  
 elathca, 202  
 elegans, 182  
 Emesis, 186  
 Epargyreus, 210  
 epiberus, 218  
 epictetus, 219  
 erato, 168  
 eresimus, 162  
 ergina, 192  
 erichto, 180  
 erosus, 213  
 Eryphanis, 166  
 ethilla, 167  
 ethlius, 219  
 eubule, 205  
 encharila, 183  
 Euchenais, 187  
 euclea, 164  
 Eudamidas, 214  
 Eudamnus, 208  
 eudocia, 190  
 Eueides, 169  
 Euptychia, 179  
 Eurema, 202  
 euryades, 167  
 Eurybia, 183  
 eurycles, 208  
 eurylochus, 165  
 evadnes, 210  
 Evenus, 200  
 exadecus, 210
- fabricii, 165  
 fastidiosa, 186  
 fatima, 186  
 ferentina, 174  
 feronia, 174  
 foliorum, 189  
 formosus, 186  
 fulgurator, 211  
 fuliginosa, 218  
 furor, 186
- gargasus, 206  
 geneveva, 171  
 gesta, 220  
 Glutophrissa, 202  
 Goniurus, 209  
 Gorgythion, 214  
 gratiosa, 203  
 grenadensis, 210  
 guppyi, 187
- gyas, 186  
 Gynæcia, 174
- Hæmatera, 173  
 halimede, 183  
 hanno, 190  
 Heliconius, 167  
 Helicopsis, 182  
 Heliopetes, 215  
 helle, 179  
 hemon, 198  
 hermes, 180  
 heroni, 221  
 hersilia, 205  
 hesione, 179  
 Hesperia, 214  
 hesperitis, 195  
 hyalinus, 179  
 hydara, 167  
 Hylephila, 219  
 Hymenitis, 164  
 Hypanartia, 171  
 Hypolimnas, 176
- iarbus, 184  
 Iaspis, 196  
 ilaire, 203  
 ilioneus, 165  
 iphicle, 176  
 irenæa, 188  
 isabelle, 169  
 Isapis, 190  
 isidora, 178  
 Itaballia, 204  
 Ithomia, 164  
 itylus, 211
- janias, 199  
 jatrophe, 171  
 julia, 169  
 junia, 180  
 juno, 170  
 justinianus, 217
- Kricogonia, 204
- lagusa, 164  
 lamis, 188  
 laothoe, 172  
 Lasaia, 187  
 lethe, 171  
 leuce, 203  
 leucodesma, 170  
 leucorrhœa, 213  
 libye, 181  
 linus, 197  
 liriopce, 170  
 litana, 219  
 longirostris, 222
- lotus, 221  
 lucianus, 184  
 lucina, 202  
 lucinda, 186  
 lugubris, 212  
 Lycorea, 162  
 Lymnas, 184  
 lyside, 204  
 lysippus, 187
- Macusia, 199  
 mantus, 189  
 marginella, 202  
 marsyas, 196  
 marthesia, 178  
 Mechanitis, 163  
 Megaleura, 175  
 megara, 163  
 Megistias, 218  
 Melinaea, 163  
 melpomene, 168  
 menander, 187  
 meris, 187  
 Mesene, 185  
 Mesosemia, 183  
 Methion, 183  
 Methionopsis, 218  
 meton, 198  
 Metron, 218  
 midas, 211  
 minos, 220  
 misippus, 176  
 Mithras, 198  
 modestus, 218  
 Moeris, 217  
 molpe, 188  
 monuste, 205  
 Morpho, 166  
 mulucha, 194  
 mylitta, 172  
 Mylon, 214
- Nascus, 211  
 nearchus, 213  
 neis, 211  
 Niconiades, 220  
 nise, 164, 202  
 nobilis, 200  
 numilia, 171  
 Nymphidium, 188
- ocalea, 164  
 ochraceus, 178  
 ocirrhoc, 179  
 ocypete, 179  
 odius, 177  
 Oenomans, 196  
 Opsiphanes, 165  
 Orses, 221

- ortygnus, 196  
 ozema, 214  
 Padraona, 219  
 Paiwarria, 199  
 palegon, 194  
 palmyra, 203  
 pandosia, 204  
 Panthiades, 197  
 Papilio, 206  
 parvinotus, 195  
 peleides, 166  
 peleus, 176  
 pelion, 197  
 pellucida, 164  
 penelea, 182  
 penelope, 179  
 perdistincta, 194  
 periander, 184  
 Perichares, 221  
 Peridromia, 174  
 Perophthalma,  
 183  
 phærusa, 169  
 phalaenoides, 214  
 phaleros, 197  
 Phanis, 217  
 Phanus, 212  
 phareus, 185  
 phidias, 207  
 phidile, 178  
 phidon, 222  
 philea, 205  
 phocus, 211  
 Phœbis, 205  
 Phyciodes, 170  
 phyleus, 219  
 phyllus, 220  
 Pierella, 179  
 Pieris, 205  
 plesauze, 177  
 polybe, 198  
 polycaon, 207  
 polydamas, 206  
 polyhymnia, 203  
 Polyuiphes, 191  
 polyxena, 166  
 pompeius, 207  
 Prepona, 177  
 Proteides, 210  
 proteus, 208  
 protillus, 208  
 Protogonius, 178  
 pseudocrispus, 184  
 pseudolycaena, 196  
 Pteronymia, 164  
 pulcherius, 214  
 pyralina, 214  
 pyramus, 173  
 Pyrrhogyra, 175  
 Pyrrhopyge, 207  
 Pythonides, 212  
 regalis, 200  
 Rekoa, 198  
 renata, 179  
 ricini, 168  
 Riodina, 187  
 romulus, 199  
 ruralis, 215  
 sagaris, 185  
 saltus, 165  
 sarota, 186  
 satyroides, 199  
 saundersii, 170  
 scintillans, 213  
 sennöe, 205  
 sergestus, 220  
 Siderone, 178  
 Siderus, 195  
 simplicior, 216  
 simplicius, 208  
 sinepunctis, 215  
 Sostrata, 213  
 sosybius, 180  
 Spathilepia, 209  
 Sphænogona, 203  
 spurius, 209  
 stagira, 192  
 Staphylus, 215  
 statira, 205  
 steneles, 176  
 stictomenes, 216  
 striga, 217  
 subplanus, 216  
 synargis, 189  
 syntarucoides, 190  
 syrictus, 214  
 tachypetis, 163  
 talayra, 194  
 Talides, 220  
 Taygetis, 181  
 telata, 218  
 Telegonus, 210  
 Temenis, 172  
 temesa, 196  
 tenera, 183  
 tephraeus, 192  
 terissa, 204  
 terrens, 213  
 Thargella, 218  
 Tharops, 187  
 Theope, 189  
 theseus, 172  
 Thisbe, 188  
 thiuz, 191  
 thoas, 207  
 thootes, 189  
 Thorybes, 212  
 Thracides, 222  
 thrasybulus, 214  
 Thymele, 211  
 Thymelicus, 219  
 tipha, 175  
 Tithoria, 163  
 Tmolus, 191  
 tryxus, 212  
 undulatus, 209  
 unilinea, 192  
 Vacerra, 219  
 vanilla, 170  
 Vehilius, 216  
 venulius, 199  
 veritabilis, 163  
 Vettius, 220  
 vibex, 219  
 Victorina, 176  
 viculata, 168  
 virbius, 216  
 virgilia, 181  
 vitreus, 212  
 Vorates, 218  
 xanthaphes, 220  
 xarifa, 184  
 Xenophanes, 212  
 Zaretas, 178  
 zarex, 211  
 Zenis, 220  
 Zeonia, 184  
 zeuxis, 206

## APPENDIX.

*Notes on the habits and early stages of some Trinidad Butterflies.* By J. GUPPY.

*Tithorea megara*, Godt. (= *T. flavescens*, Kirby). (Pl. XVIII, figs. 3—3b.)

*Ocum.* Conical, flattened at top, faintly tinted yellow with numerous cell-like depressions, which are better defined at the upper end, to about a third of the height down.

*Larva.* Head shining jet black. Abdomen black and white as shown in figure. Frequently the larva is almost black but rarely one is lilac tinted and less opaque looking. Arising from the second segment are two long soft flexible processes which, when the larva is alarmed, are twitched nervously.

*Habits.* The larva is day feeding and is easily noticed on its food-plant (*Echites sp.*), a low creeper which is very abundant and hardy. The larva, which is sluggish, is to be found all the year round in Tunapuna. The imago lays her eggs singly on the under-side of a leaf generally about mid-day or early afternoon.

*Lycorca eeres*, Cram. (Pl. XVIII, figs. 4, 4a.)

*Ocum.* Much like that of *Tithorea flavescens* only larger. It is placed on the under-side of a leaf of cocoa or a plant that resembles a rubber plant. The egg hatches in about five days.

*Larva.* Black and white as shown in figures. Head shining black. From the fourth segment to the anal segment the white hook-like marks become yellow in the mature larva.\* As in *T. flavescens* there are two horn-like processes on the second segment. In habits the larva is sluggish and feeds by day.

*Heterosais ocalea.*

*Ocum.* Pearly white ribbed longitudinally. Resembles *Tithorea megara*, but is shorter and of larger circumference.

Laid singly on under-side of a leaf usually near a stream and about two feet from the ground. Oval period five days.

---

\* Presumably Mr. Guppy has not given a figure of the larva in its last skin, unless by "mature" he means the final change of colour undergone previous to pupation.—W. J. K.

*Larva.* Semi-transparent like *Mechanitis veritabilis* when newly hatched, changing later to a shining transparent bottle-green with a greenish-white head. When mature sometimes more or less translucent greenish, paler or clearer but without any definite markings save a dorsal stripe caused by the food showing through the skin.

When at rest the larva invariably assumes a coiled-up attitude with the head bent round to touch the body. Feeding takes place from the under-side of the leaf and the larva is sluggish. The period from hatching to pupating is about nine days.\*

*Protogonius ochraceus*, Butl. (Pl. XVII, figs. 3, 3a.)

The egg is laid on the under-side of a leaf singly, and I noticed the female depositing at 9.30 A.M. near a stream. It is smooth, shining, and translucent, and is faintly tinted green. The micropyle is situated in a basin-like depression at the top.

*Caligo saltus*, Kaye. (Pl. XVII, figs. 1—1f.)

The larva of *Caligo ilioneus* (l. c. *saltus*, n. sp.), feeds on banana. The larva is shown in all its stages except after the 3rd month.†

*Opsiphancs cassiæ*, Linn. (Pl. XVII, figs. 2—2b.)

The larva is shown after 1st and 2nd month and when full grown. The full-fed larva is sometimes rather greener than shown.‡

*Theope eudocia*, Hew. (Pl. XVIII, figs. 1, 1a.)

*Larva.* Head small, prominent, black and shining with a whitish inverted V-mark. Abdomen light green with a yellowish tinge, 1st segment with two remarkable bunches of club-shaped black and

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\* It is unfortunate that Mr. Guppy is unable to say definitely whether nine days was the actual larval existence of this species. If that were true the complete metamorphoses would only take probably three weeks or less. It is quite possible for an *Ithomiine* to do this, as Mr. F. W. Urich has frequently told me that *Mechanitis veritabilis* goes through all its stages in a month. The *Ithomiinæ* are doubtless amongst the most rapid breeders of the Lepidoptera, and hence to a great extent their prodigious numbers.—W. J. K.

† Mr. Guppy made a sketch of the larva at this stage and reproduction was not possible.

‡ No food-plant is given. It is probably banana.—W. J. K.

brown protuberances projecting forward with a few small intermediate brown ones. From these rise some fine whitish hairs. A fringe of similar hairs surrounds the body of the larva. A very peculiar and remarkable feature is the anal segment, which has a sort of bony whitish scale flat and shining and divided by a black line; immediately in front of this are two brown wart-like humps lighter in the centre.

*Habits.* The larva feeds from the inside of a rolled cocoa leaf; the young and tender leaves being chosen. The larva is mymepophilous and lives surrounded by ants within the rolled-up leaf. The ants evidently protect the larva and use it as an ant-cow is used. The wart-like portions on the anal segment are tickled and an exudation ensues which the ants are eager to obtain. When I removed a larva the ants made a great fuss. They smell very strongly of formic acid and are very active and build paper nests among the leaves. They frequently run over the larva, which does not take any apparent notice of the proceeding.

*Pupa.* Attached by the tail with a girth round the centre as in the Theclid species.

*Theope foliorum*, Bates. (Pl. XVIII, fig. 2.)

*Larva.* Very similar to *Theope eudocia* and lives on the same plant under the same conditions.

*Nymphidium molpe.*

*Larva.* Head small and hairy. Abdomen flat slug-shaped very similar in shape and habits to the two preceding *Theope* species. A pair of horn-like protuberances take the place of the club-like ones in the foregoing. Before pupating the body turns brownish. The anal segment is similar to the *Theope* larvæ and there are large ants that attend and milk the larvæ. These ants are solitary, are armed with a powerful pair of jaws, and when I went to remove them from the backs of the larvæ, they snapped violently at the piece of wood I was holding. A pair of larvæ are generally found on each plant and are to be obtained chiefly on the low-growing *Cassia* plants, chiefly through the dry season, though some are to be found at all times.

*Pupa.* Very much like a piece of wood.

*Mechanitis veritabilis*, Butl.

*Ovum.* Pure white with about thirteen longitudinal ridges, spindle-shaped. The micropyle appearing as a small flattened area at the apex. The eggs are laid regularly in batches, but each egg is quite

detached. From twelve to twenty-five are laid at a time on the upper-side of a leaf.

*Habits of larva.* The larvæ are gregarious and are sluggish. Under domestication they are very easy to rear.

*Arawacus linus*, Sulz. (Pl. XVIII, figs. 5—5b.)

*Ovum.* Laid singly on stem of plant near the top.

*Larva.* Head small, retractile. Abdomen green covered with fine downy hair and with a series of large tufts down the back.

*Habits.* The larva is very sluggish and usually eats holes from the upper-side of a leaf of cocoa. The butterfly nearly always breeds in a shady place near a stream, and can never be induced to fly far, seeming to be much attached to its favourite haunt.

*Mithras hemon*, Cram.

*Larva.* Pink or whitish-pink and very much the same colour as the very young shoots of the cocoa on which it feeds. The shoots that spring around the stem or trunk of the cocoa are those usually selected.

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#### EXPLANATION OF PLATE XVII.

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FIG. 1. *Caligo saltus*, ovum.

- |     |   |   |                     |
|-----|---|---|---------------------|
| 1a. | „   | „ | larva just hatched. |
| 1b. | „   | „ | „ after 1st moult.  |
| 1c. | „   | „ | „ „ „               |
| 1d. | „   | „ | „ „ 2nd moult.      |
| 1e. | „   | „ | „ „ 4th moult.      |
| 1f. | „   | „ | „ full fed.         |
| 2.  | <i>Opsiphanes cassiæ</i> , larva after 1st moult. |   |                     |
| 2a. | „   | „ | „ „ 2nd moult.      |
| 2b. | „   | „ | „ full fed.         |
| 3.  | <i>Protogonius ochraceus</i> , ovum.              |   |                     |
| 3a. | „   | „ | „ side view.        |

## EXPLANATION OF PLATE XVIII.

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- FIG. 1. *Theope eudocia*, larva full fed.  
1a. " " " much enlarged.  
1b. " " head of larva.  
1c. " " growth at side of head of larva.  
1d. " " the growth enlarged.  
2. *Theope foliorum*, larva full fed.  
3. *Tithorea megara*, larva after 1st moult.  
3a. " " larva full fed, lateral view.  
3b. " " " " dorsal view.  
4. *Lycorea ceres*, larva after 1st moult.  
4a. " " " full fed.  
5. *Aravacus linus*, larva full fed.  
5a. " " pupa.  
5b. " " empty pupa case.  
6. *Helicopsis elegans*, n. sp.  
7. *Hæmateræ pyramus*, var. *rubra*, nov.  
8. *Tmolus perdistincta*, n. sp.  
9. *Emesis guppyi*, n. sp.  
10. *Cricosoma coccineata*, n. sp.

